HYDROCARBON PROCESSING

1966 ANNUAL EDITORIAL INDEX

Volume 45

HYDROCARBON PROCESSING
Is Published By
GULF PUBLISHING COMPANY

EXECUTIVE OFFICES: 3301 ALLEN PARKWAY, HOUSTON
CABLE ADDRESS, GULFPUBCO, HOUSTON

World's Largest Specialized Publishers to the Oil Industries

GPC PUBLICATIONS

HYDROCARBON PROCESSING and The HYDROCARBON PROCESSING CATALOG for the hydrocarbon processing industry (HPI).

WORLD OIL (formerly The Oil Weekly) and The COMPOSITE CATALOG for the drilling-producing industry.

PIPE LINE INDUSTRY and The PIPE LINE CATALOG for the oil and gas pipe line industry.

Index Reprints can be obtained by writing the librarian,

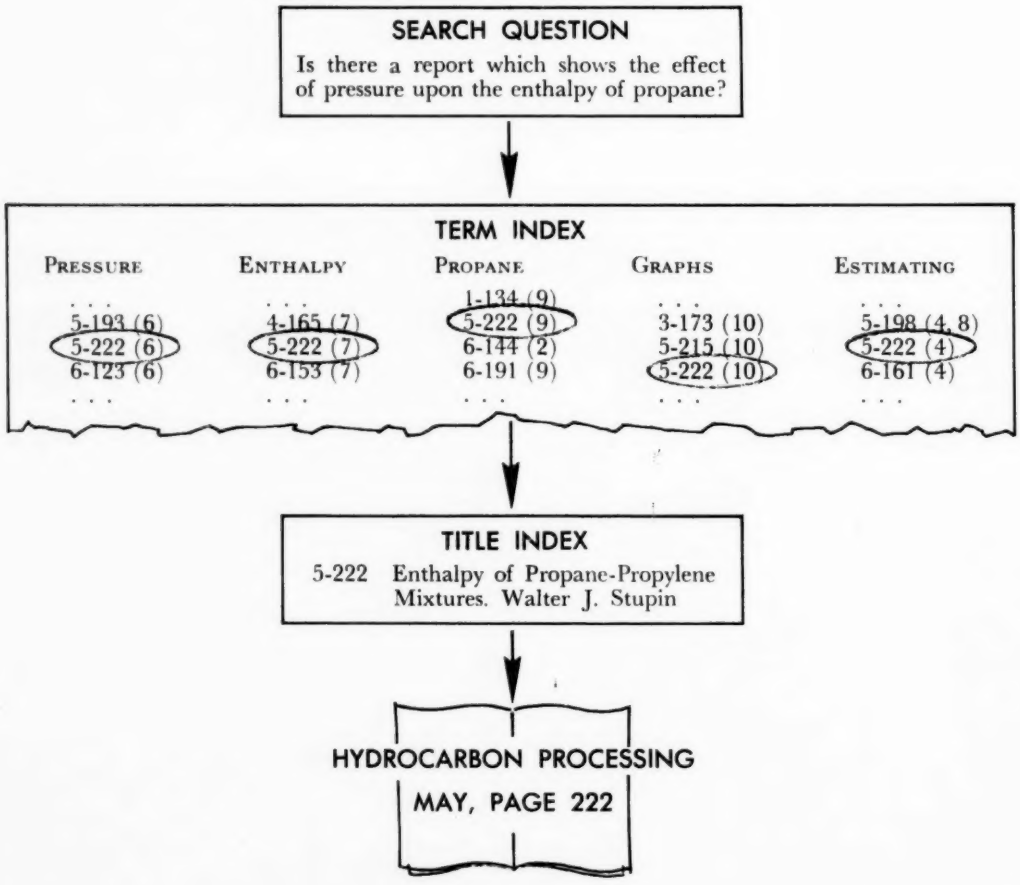
HYDROCARBON PROCESSING • BOX 2608, Houston, Texas 77001

How to Search the Annual Index

THIS INDEX IS PRESENTED in a form which makes it possible to use concept coordination[1] to search for the information you want. Here are some of the advantages of this form of indexing:

Short Cut Method. Although the index was devised to handle complicated retrieval problems, it can be used in the ordinary way. For example, if you are seeking information about propane, you look for PROPANE in the Term Index. Following the term, PROPANE, is a list of article numbers telling where to find reports on this substance.

Code Numbers. The article number usually is in three parts: The first part refers to the month of publication in *Hydrocarbon Processing*. The second part refers to the page of that issue. The first two parts are all you need to find articles about one subject. For example, the number 1-134 (9) following the term, PROPANE, refers to a report appearing in Issue No. 1 (January), page 134.



COORDINATE INDEXING

The greatest value of this form of indexing is in its use for concept coordination. Two or more concepts (terms) can be coordinated to narrow the search for more pertinent reports. Such a search scheme requires that a search question be formulated which is specific to the search problem.[2]

Steps in Searching. First, make a statement of the search question. Second, search for each of the keywords in the Term Index. Identical article numbers (excluding parenthetical numbers) following these terms refer to articles combining all of these concepts. Portions of the Term Index are reproduced in the accompanying diagram to show how this works.

Roles Help Retrieval. The number in parenthesis at the end of each article number tells how a term is used in a report. For a definition of role numbers, see the accompanying box. A comparison of the parenthetical numbers disclose whether the terms are related in the way you desire.

An Example. In our search example, the primary topic is a cause-and-effect relation. The article must discuss the effect of one variable (Role 6), PRESSURE, upon another variable (Role 7), ENTHALPY. Furthermore, this relation should be for the substance (Role 9), PROPANE. An examination of the term index shows the article number 5-222 contains the proper role identification for these three indexing terms. Furthermore, GRAPHS are used (Role 10), to show the relation and the data can be used for ESTIMATING (Role 4) the physical properties of this substance.

Other Search Terms. Usually, more than one term can be used to signify a single concept. This redundancy is included in the index, too. The article of our example, for instance, is also indexed following the terms: PHYSICAL PROPERTIES, HYDROCARBONS, LIQUIDS, etc.

The Thesaurus[3] of the American Institute of Chemical Engineers is used to make our selection of indexing terms. Although some new terms are added, the Thesaurus gives a list of preferred terms. This explains why a particular term may be missing from the index. For example, the Thesaurus suggests DISTILLATION be used instead of FRACTIONATION.

Rules for Indexing. There also are ground rules for selecting the role numbers as well as indexing terms. The reader is referred to a report[4] by the Engineers Joint Council for a discussion of the proper choice whenever several alternate role selections seem possible.

LITERATURE CITED

[1] Morse, Rollin and Wall, Eugene, "New Information Retrieval Standards," *Petroleum Refiner*, 40, No. 5, 263 (1961).
[2] Liston, David M., and Halliday, T. Carter, "How to Search the New Annual Index," *Hydrocarbon Processing & Petroleum Refiner*, 42, No. 12, 142 (1963).
[3] "Chemical Engineering Thesaurus" American Institute of Chemical Engineers, 345 E. 47th St., New York, N. Y. 10017.
[4] "Operating Manual for use in Abstracting and Coordinate Indexing," Information Systems Research Division, Battelle Memorial Institute, 505 King Ave., Columbus, Ohio.

Meaning of Roles in the EJC System

Role 1. Input; raw material; material of construction; reactant; base metal (for alloys); components to be combined; constituents to be combined; ingredients to be combined; material to be shaped; material to be formed; ore to be refined; subassemblies to be assembled; energy input (only in an energy conversion); data and types of data (only when inputs to mathematical processings); a material being corroded

Role 2. Output; product, byproduct, co-product; outcome, resultant; intermediate product; alloy produced; resulting material; resulting mixture or formulation; material manufactured; mixture manufactured; device shaped or formed; metal or substance refined; device, equipment or apparatus made, assembled, built, fabricated, constructed, created; energy output (only in an energy conversion); data and types of data (only as mathematical processing outputs)

Role 3. Undesirable component; waste; scrap; rejects (manufactured devices); contaminant; impurity, pollutant, adulterant, or poison in inputs, environments, and materials passively receiving actions; undesirable material present; unnecessary material present; undesirable product, byproduct, co-product

Role 4. Indicated, possible, intended present or later uses or applications. The use or application to which the term has been, is now, or will later be put. To be used as, in, on, for, or with; for use as, in, on, for, or with; used as, in, on, for, or with; for later use as, in, on, for, or with

Role 5. Environment; medium; atmosphere; solvent; carrier (material); support (in a process or operation); vehicle (material); host; absorbent, adsorbent

Role 6. Cause, independent or controlled variable; influencing factor; "X" as a factor affecting or influencing "Y"; the "X" in "Y" is a function of "X"

Role 7. Effect; dependent variable; influenced factor; "Y" as a factor affected or influenced by "X"; the "Y" in "Y" is a function of "X"

Role 8. The primary topic of consideration; the principal subject of discussion; the subject reported; the major topic under discussion

Role 9. Passively receiving an operation or process with no change in identity, composition, configuration, molecular structure, physical state, or physical form; possession such as when preceded by the preposition of, or on meaning possession; location such as when preceded by the preposition in, on, at, to, or from meaning location, used with months and years when they locate information (not bibliographic data) on a time continuum

Role 10. Means to accomplish the primary topic of consideration or other objective

Role 0. Bibliographic data, personal names of authors, corporate authors and sources, types of documents, dates of publication, names of journals and other publications, other source-identifying data, and adjectives

TERM INDEX

Absorbents/Materials/
9-265 (10)

Absorbers/
Not Materials/
4-137 (10)
6-171 (10)

Absorption
9-222 (8, 9, 10)
9-223 (8, 9, 10)
9-224 (8, 9, 10)
9-225 (8, 9, 10)
9-226 (8, 9, 10)
9-227 (8, 9, 10)
9-228 (8, 9, 10)
9-229 (8, 9, 10)
9-230 (8, 10)
9-231 (8, 9, 10)
9-232 (8, 9, 10)
9-233 (8, 9, 10)
9-235 (8, 10)
9-236 (8, 9, 10)
9-238 (8, 10)
8-239 (8, 9, 10)
9-255 (8, 10)
9-261 (8, 9, 10)
9-262 (8, 10)
9-265 (8, 9, 10)
9-275 (8, 10)
12-107 (8, 9)

Accounting
2-167 (10)
3-181 (10)

Acetaldehyde
6-195 (2)
11-155 (1)

Acetal Resins
7- 83 (9)
11-155 (2)

Acetic Acid
6-195 (2)
6-200 (7)
11-171 (1)

Acetone
6-195 (2)
12-107 (2)

Acetylene
4-187 (2)
8-125 (9)

Acids/Carboxylic/
6-195 (2)
6-200 (7)
9-268 (10)
9-272 (1)
11-171 (1)

Acids/Inorganic/
1-107 (5, 6, 9)
3-157 (5)
4-131 (3)
4-203 (1)
6-181 (1)
6-203 (9)
8-168 (10)
9-205 (10)
9-213 (10)
9-254 (10)
9-258 (10)
9-259 (10)
9-261 (10)
9-262 (3)

Acrolein
11-155 (1)

Acrylic Compounds
7- 83 (9)
8-125 (9)
11-155 (1)

Acrylonitrile
8-125 (9)

Acrylonitrile-Butadiene-Styrene Plastics
7- 83 (9)

Action
2-171 (7)

Activated Carbon
10-189 (10)

Activities
10-183 (9)

Actuators
9-297 (9)

Acylation
6-203 (4)

Addition/Process/
2-153 (9)

Additives
4-183 (6)
9-303 (4)
9-255 (10)
9-260 (10)
9-263 (10)

Adjusting
2-105 (4, 6)

Adsorbents/Materials/
9-254 (5)
9-256 (10)
9-276 (10)
12-88 (5)

Adsorbers/
Not Materials/
5-170 (9)

Adsorption
2-125 (10)
8-145 (10)
9-254 (8, 10)
9-256 (8, 9, 10)
9-276 (8, 9, 10)
10-189 (10)
12-88 (8, 9)

Aggregates
1-128 (10)

Agitating
4-207 (10)

Air
2-125 (9)
4-203 (1)
4-207 (10)
6-131 (6)
6-137 (5)
9-263 (1)
9-267 (1)
11-171 (1)
11-174 (1)
11-183 (1)
11-195 (1)

Airlift TTC Process
9-185 (9)

Alarms
4-131 (10)
9-297 (9)

Alcohols
2-148 (2)
4-131 (10)
4-137 (5, 9)
6-171 (10)
6-195 (2)
7-125 (7, 10)
9-224 (10)
9-236 (10)
9-261 (10)
9-262 (10)
9-268 (10)

Aldehydes
2-148 (2)
6-195 (2)
7-133 (5)
9-225 (10)
9-226 (10)
11-155 (1)

Algerba
8-155 (10)

Algeria
4-134 (9)

Aligning
1-131 (6)

Alkalies
5-181 (6)
9-258 (10)
9-259 (10)
9-263 (10)
9-264 (10)
9-266 (10)
9-268 (10)
9-272 (10)
10-135 (6)
11-225 (1)

Alkanes
1-142 (9)
10-161 (9)
12-113 (9)

Alkenes
2-157 (9)
7-137 (9)
10-161 (9)
12-113 (9)

Alkoxylation
6-203 (4)

Alkylation
1-107 (4, 9)
9-205 (8, 9, 10)

n-Alkyl Benzene
7-137 (9)

n-Alkyl Cyclohexanes
7-137 (9)
10-161 (9)

Alloying
5-201 (6)

Alloys
1-126 (9)
5-181 (9)
5-201 (9)
10-127 (9)
10-135 (9)
12-144 (9)

Alternatives
6-141 (6)

Aluminum
12-97 (1, 2)

Aluminum Oxide
3-170 (10)
10-146 (10)
11-189 (10)

American
10-127 (0)

Amides
9-237 (10)

Amines
4-131 (10)
4-137 (5, 9)
7-125 (7, 10)
7-133 (5)
9-261 (10)
9-262 (10)
9-263 (10)
11-174 (3)

Ammonia
1-135 (9)
2-129 (1)
5-193 (4)
5-218 (1)
9-320 (1)
11-146 (1)
11-174 (1)
11-183 (1)

Ammonia Oxidation Process
11-174 (10)

Amplitude
2-143 (7)

Amylene
11-189 (1)

Analysis/Composition/
5-227 (8)
6-217 (8)
7-145 (10)
8-173 (10)
9-311 (10)
10-207 (10)
12-127 (10)

Analyzers
7-130 (10)
9-297 (9)

Analyzing
1-104 (10)
4-137 (8)
4-169 (10)
4-199 (10)
6-141 (8)
7-130 (8)
10-183 (8)
12-109 (8)

Aniline
7-133 (5)

Annual
4-169 (10)

Annunciators
4-131 (10)

Antiknock Rating
5-145 (7)
7-103 (7)
8-168 (7)
9-195 (7)
9-205 (7)
9-213 (7)

Antioxidants
9-263 (10)

Anxiety
11-229 (7)

Appraisals
7-147 (8)
8-102 (8)
8-108 (8)
8-115 (8)
8-120 (8)

Appropriations
1-172 (10)

Areas/Location/
1-115 (6)
4-180 (9)

Areas/Surface/
6-137 (6)
12-135 (6, 7)

Aromatic
5-188 (2, 9)
5-205 (9)
9-195 (2)
9-223 (2)
9-231 (3)
9-233 (10)
9-235 (2)
9-236 (2)

Asphalt
5-153 (7)
9-228 (3)
9-232 (2)
9-271 (2)

Attitudes
10-207 (10)
11-233 (7)
11-235 (7)

Austenite
5-181 (9)

Authority
5-235 (7)

Autofining Process
9-240 (9)

Automatic
2-105 (0)

Availability
1-123 (10)
4-173 (7)

Azeotropes
11-151 (10)
12-103 (2, 6, 10)

Azobenzene
12-97 (1, 2)

Backlog
5-187 (10)

Baffles
6-123 (7)

Balance of Payments
5-238 (7)

Balancing
3-126 (6)
5-175 (6)
12-137 (7)

Banks
8-145 (10)

Bases/Chemical/
5-181 (6)
9-258 (10)
9-259 (10)
9-263 (10)
9-264 (10)
9-266 (10)
9-268 (10)
9-272 (1)
10-135 (6)
11-225 (1)

Bases/Not Chemical/
7-109 (9)

BASF-IFP Hydrocracking Process
3-129 (9)
9-177 (9)

Batch-wise
12-123 (9)

Beams/Structural/
12-109 (9)

Beds
8-165 (9)

Behavior
2-171 (7)
3-189 (7)
11-235 (7)

Bellows
5-175 (9)
5-181 (9)

Bending
1-131 (6)

Benedict-Webb-Rubin
6-161 (0)

Benzene
5-140 (2)
5-205 (9)
6-189 (9)
9-177 (1)
12- 97 (1, 2)

Bids
6-141 (7, 9)

Binary
6-189 (9)
11-205 (9)

Blending
4-207 (10)

Blocks
5-175 (10)

Blowby
9-303 (7)

Boiling Points
11-145 (8)
12-103 (7)

Bolting
10-158 (9)

Boron Fluoride
11-155 (10)

Boron Phosphate
11-146 (10)

Bracing
2-143 (6)

Brainstorming
10-207 (10)

British
10-127 (0)

Brittleness
10-135 (7)

Bromine
11-189 (10)

Bubble Caps
1-107 (9)

Budgets
1-172 (9)
5-187 (10)

Builders
11-197 (4)

Bulk Acid Polymerization Process
9-205 (9)

Burning
11-221 (8, 9, 10)

Business
4-169 (10)

Butadiene
6-195 (2)
11-151 (2)
11-189 (2)
12-113 (9)

Butamer Process
9-213 (9)

Butane
1-134 (9)
4-168 (9)
5-145 (2)
6-191 (9)
6-195 (1, 9)
7-103 (2)
9-177 (2)
9-185 (2)
9-213 (1)
9-154 (1, 2)
9-258 (1, 2)
9-270 (1)
9-274 (1)
9-275 (2)
11-189 (1)
12- 88 (1, 2)
12-113 (9)

Butanol
10-171 (9)

Butenes
1-134 (9)
3-156 (9)
6-191 (9)
9-205 (1)
9-270 (2)
9-275 (20)
11-151 (1)
12-113 (9)

Butomerate Process
9-213 (9)

Butyric Acid
9-268 (10)

Bypass
6-123 (6)

Calculus
2-105 (10)
2-153 (10)

Canada
7-125 (9)

Capacity
3-161 (7)
5-145 (7)
5-149 (6)
5-159 (6)
6-153 (7)
7-111 (7)
9-177 (6)
9-281 (6)
9-185 (6)
9-195 (6)
9-205 (6)
9-213 (6)
9-224 (6)
9-225 (6)
9-226 (6)
9-228 (6)
9-232 (6)
9-233 (6)
9-239 (6)
9-240 (6)
9-258 (6)
9-259 (6)
9-260 (6)
9-261 (6)
9-264 (6)
9-266 (6)
9-267 (6)
9-274 (6)
10-171 (7)
10-193 (6)
11-225 (7)
12- 88 (7)
12-123 (6)

Capital
2-167 (9)
3-181 (9)
5-238 (7)

Caps/Not Explosives/
1-107A (9)

CARBAMATES/ESTERS/
9-237 (10)

CARBIDES
10-135 (6)

CARBON
10-189 (10)

CARBON DIOXIDE
1-139 (9)
2-129 (1)
3-145 (6)
4-137 (3)
5-218 (2)
6-144 (3)
7-125 (3)
8-145 (3)
9-261 (3)
9-285 (10)
9-262 (3)

CARBON DISULFIDE
4-203 (1)

CARBON MONOXIDE
2-148 (1)
2-158 (9)
11-177 (1)

CARBON TETRACHLORIDE
3-161 (9)

CARBONATES/INORGANIC/
7-125 (10)

CARBONYLS/INORGANIC
2-148 (10)

CARBURIZING
9-291 (10)

CAREERS
11-235 (6)

CASCADE SULFURIC ACID ALKYLATION PROCESS
9-205 (9)

CASCADING
9-151 (10)

CASES
8-111 (10)

CAST IRON
1-126 (9)

CATADIENE PROCESS
9-270 (9)

CATALYSIS
3-129 (8, 10)
4-203 (4, 8, 10)
5-145 (8, 9)
5-149 (8, 10)
5-153 (8, 10)
5-159 (8, 10)
6-203 (10)
7-103 (8, 10)
8-168 (8, 9, 10)
9-177 (8, 10)
9-185 (8, 10)
9-195 (8, 10)
9-205 (8, 9, 10)
9-213 (8, 10)
9-240 (8, 10)
9-263 (8, 10)
9-264 (8, 9, 10)
9-267 (8, 9, 10)
9-270 (8, 10)
9-274 (8, 10)
10-183 (4)

CATALYSTS
2-148 (10)
3-129 (10)
4-203 (1, 2)
5-145 (8, 10)
5-149 (10)
5-153 (10)
5-159 (10)
5-165 (10)
5-218 (10)
6-181 (9)
7-103 (10)
8-168 (10)
9-177 (10)
9-185 (10)
9-195 (10)
9-205 (10)
9-213 (10)
9-240 (10)
9-263 (10)
9-264 (10)
9-267 (10)
9-270 (10)
9-274 (10)
9-277 (10)
9-320 (10)
10-183 (9)
11-146 (10)
11-155 (10)
11-171 (10)
11-174 (10)
11-177 (10)
11-183 (10)
11-189 (10)
11-195 (10)

CATALYTIC REFORMING PROCESS
9-195 (9)

CAT-A-METHOD
10-183 (0)

CAT-D-1 METHOD
10-183 (0)

CAUSTICS
5-181 (6)
8-141 (6)
9-258 (10)
9-259 (10)
9-263 (10)
9-264 (10)
9-266 (10)
9-268 (10)
9-272 (1)
11-225 (1)

CENTRIFUGAL
4-194 (9)

CENTRIFUGES
3-145 (10)

CHANNELS
11-211 (9)

CHAR
5-165 (2)

CHARACTERIZATION
4-183 (4, 8)

CHARTS
4-199 (10)
5-201 (10)
6-131 (10)
10-165 (10)

CHELATING AGENTS
11-197 (6, 9)

CHECK LISTS
6-217 (10)

CHEMICAL DESALTING PROCESS
9-255 (8, 9)

CHEMICAL PROPERTIES
5-149 (7)
8-168 (7)
9-195 (7)
9-213 (7)
9-240 (7)
11-145 (8)
11-155 (7)

CHLORAL HYDRATE
11-155 (2)

CHLOREX
7-133 (5)

CHLORIDES/INORGANIC/
8-141 (10)
8-168 (10)
9-213 (10)
9-257 (5)

CHLORINE
11-155 (1)

CHLORINATED HYDROCARBONS
9-222 (10)
11-225 (1)

CHLOROETHANE
7-111 (9)

CHLOROFORM
3-161 (9)

CHLOROPROPANE
7-111 (9)

CHROMIUM ALLOYS
5-181 (9)
5-201 (9)

CIRCULATION
6-171 (6)

CLADDING
10-135 (9)

CLARIFICATION
9-256 (8, 9, 10)
9-265 (8, 9, 10)

CLARITY
9-256 (7)
9-265 (7)

CLASSIFYING
4-159 (8)
4-183 (4, 8)

CLAUS PROCESS
6-181 (9)

CLAYS
9-265 (10)

CLEANING
2-125 (8)

CLEARANCES
6-123 (6)

CLOTHING/MATERIAL/
1-107 (9)

CLOUD POINT
4-183 (7)

COAL
5-165 (1)
11-221 (1)

COASTAL STATES
6-144 (0)

COATING PROCESS
10-135 (9)

COBALT
2-148 (10)

CODES
10-127 (10)

COEFFICIENTS
4-194 (6)
6-123 (6)

COKE
7-119 (6)
9-185 (2)
9-291 (6)
11-221 (1)

COLBURN
3-173 (0)

COLLECTORS
11-218 (9)

COLOR
5-149 (7)
9-256 (7)

COLUMNS/PROCESS/
8-165 (9)
9-285 (9)

COLUMNS/STRUCTURAL/
12-109 (9)

COMBUSTION
9-303 (9)
11-221 (8, 9, 10)

COMMUNICATING
1-104 (8)
8-164 (7, 8)

COMMUNICATIONS
1-123 (10)
3-189 (7)
5-235 (7)
6-186 (6)
10-203 (8)
11-233 (7)

COMPARISON
6-141 (10)
7-125 (8)
8-137 (8)

COMPOSITIONS
3-129 (7)
3-173 (6)
4-183 (6)
5-145 (7)
5-153 (7)
5-159 (7)
5-198 (6)
5-215 (9)
7-103 (7)
8-167 (6)
8-168 (6, 7)
9-177 (7)
9-185 (7)
9-195 (7)
9-213 (7)
9-240 (7)
9-276 (7)
10-127 (6)
11-221 (7)
12-107 (6)

COMPOUNDING
11-197 (10)

COMPRESSIBILITY
1-134 (7)
3-156 (7)
6-200 (6)

COMPRESSION
8-137 (10)

COMPRESSORS
1-128 (9)
4-194 (9)
5-170 (9)
8-145 (10)
10-165 (9)

What the Numbers Represent

4-173 (10)

Month Page Role

COMPUTATIONS
2-153 (10)
3-145 (4)
3-161 (4)
4-169 (8)
4-199 (10)
6-153 (4)
7-111 (4)
8-155 (4)
10-171 (4)
11-205 (4)
12-113 (4)
12-123 (10)
12-127 (10)

COMPUTERS
1-123 (10)
4-194 (10)
6-181 (10)
8-145 (10)
9-297 (9)
12-107 (10)
12-135 (10)
12-137 (10)

COMPUTING
6-116 (8)
8-165 (4)
10-193 (8)
12-137 (8)

CONCENTRATIONS
3-145 (7)
3-173 (6)
4-183 (6)
5-198 (6)
6-171 (6)
7-125 (6, 7)
9-277 (6)
9-285 (6, 7)
10-189 (7)
12- 88 (6, 7)
12-103 (7)

CONCEPT COORDINATION
4-159 (10)

CONCEPTS
10-203 (9)

CONDENSATES
11-218 (4)

CONDENSATION
6-116 (9)
11-155 (10)

CONDENSERS/PROCESS EQUIPMENT/
1-107 (9)
6-116 (9)

CONDITIONING
4-203 (6, 8, 10)

CONDUCTIVITY
3-161 (7)
6-153 (7)
7-111 (7)
10-171 (7)
12-113 (7)

CONSTRUCTION
7-145 (9)
8-145 (8)

CONTAINERS
4-207 (9)

CONTAMINATION/PROCESS/
7-130 (7)
9-303 (4)
11-221 (7)

CONTINUOUS CONTACT FILTRATION PROCESS
9-256 (9)

CONTRACTORS/VENDORS/
1-115 (9)

CONTRACTS/AGREEMENTS/
1-115 (10)
6-149 (6, 8)
8-164 (10)

CONTROL
8-151 (7)

CONTROLLERS
2-105 (9)
8-151 (10)
9-297 (9)

CONTROLLING
1-123 (8)
1-172 (8)
2-105 (4)
2-167 (8)
10-199 (10)

CONVERSION
2-129 (7)
3-129 (8, 9, 10)
5-145 (8, 9, 10)
5-153 (8, 9, 10)
5-159 (8, 9, 10)
5-165 (8)
6-181 (7)
7-103 (7)
8-168 (8, 9, 10)
9-185 (8, 9, 10)
9-195 (8, 9, 10)
9-213 (8)
11-189 (7)

COOLERS
6-131 (9)
6-137 (9)
6-141 (4)

COOLING
2-125 (10)
4-183 (10)
6-116B (6)
6-131 (4)
8-137 (10)
8-145 (10)
9-234 (8, 9, 10)
9-238 (8, 10)
9-239 (8, 9, 10)
10-189 (10)
11-211 (7)

COORDINATING
1-115 (6)
6-186 (10)

COPOLYMERIZATION
11-155 (10)

COPOLYMERS
11-155 (2)

COPPER
11-171 (10)

COPPER CHLORIDE
9-257 (5)

COPPER SWEETENING PROCESS
9-257 (9)

CORRELATIONS
1-157 (10)
7-133 (4)

CORROSION/PROCESS/
1-107 (6)
1-126 (3)
3-157 (3)
4-137 (3)
5-181 (7)
5-201 (3, 7)
8-141 (3)
9-285 (8)
9-291 (3)
10-135 (7)
11-151 (3)

COSTS
1-104 (7)
1-157 (7)
1-172 (9)
2-167 (10)
3-129 (7)
3-181 (10)
4-134 (8)
4-169 (6)
4-187 (8)
4-199 (7)
5-140 (7)
5-145 (7)
5-149 (7)
5-159 (7)
5-193 (7)
6-131 (7)
6-137 (7)
6-141 (7)
6-144 (7)
6-149 (7)
8-168 (7)
9-177 (7)
9-185 (7)
9-195 (7)
9-205 (7)
9-213 (7)
9-225 (7)
9-226 (7)
9-228 (7)
9-232 (7)
9-233 (7)
9-239 (7)
9-240 (7)
9-258 (7)
9-260 (7)
9-261 (7)
9-264 (7)
9-266 (7)
9-267 (7)
9-274 (7)
10-119 (7)
10-193 (6, 7)
11-151 (8)
11-155 (7)
11-171 (7)
11-221 (7)
11-225 (7)
12-107 (6)
12-123 (6)
12-127 (6)

COUNSELING
8-108 (8)
10-199 (10)

COUPONS/SAMPLES/
9-285 (9)

COVERINGS
1-126 (8)

COYANOSA
4-131 (9)

CRACKING/CHEMICAL/
3-129 (8, 9, 10)
4-187 (10)
4-203 (4)
5-140 (8, 9, 10)
5-145 (8, 9, 10)
5-149 (8, 9, 10)
5-153 (8, 9, 10)
5-159 (8, 9, 10)
7-103 (8, 9, 10)
9-177 (8, 9, 10)
9-185 (8, 9, 10)
9-195 (8, 9, 10)
9-240 (8, 9, 10)
9-273 (8, 10)
10-183 (4)
12-144 (4)

CRACKING/FAILURES/
5-181 (8)
9-291 (8)
10-158 (7)

CRAFTSMEN
1-104 (9)
8-164 (9)

CREATIVITY
1-167 (10)
3-189 (7)
10-207 (8)

CREEP
5-170 (6)
11-180 (7)

CRESOL
6-200 (9)
9-224 (10)

CRITICAL
1-135 (7)
1-139 (7)
2-158 (7)
2-161 (7)
3-137 (7)
3-141 (7)
4-165 (7)

CRITICAL PATH
4-161 (7)

CRUDE DISTILLATION, THREE STAGES PROCESS
9-271 (9)

CRUDES
5-165 (2)
8-141 (5)
9-255 (1, 2)
9-260 (1, 2)
9-271 (1)

CRYOGENICS
8-137 (9)
11-211 (4)

CRYSTALLINITY
11-155 (7)

CRYSTALLIZATION
4-183 (7)
12- 97 (8, 10)

CRYSTALLIZERS
12- 97 (10)

CURVES
1-157 (10)
3-173 (10)
5-201 (10)
6-116 (10)
6-131 (10)
8-165 (10)
12- 88 (10)
12-107 (10)

CYANIDES
8-125 (9)

CYCLES
10-189 (10)

CYCLING
11-218 (6)

CYCLIZATION
6-203 (4)

CYCLOHEXANE
5-205 (9)
6-191 (9)
11-155 (5)
12-103 (1, 2)

CYCLOPENTANE
12-103 (1, 2)

CYLINDERS
7-109 (4)

DAMPING
2-143 (7)

DECANE
6-191 (9)

DECARBONIZING
9-232 (8, 9, 10)

DEFICITS
5-238 (7)

DEFLECTIONS
1-131 (6)
2-143 (7)

DEHYDRATION
4-131B (8)
6-171 (10)

DEHYDRATORS
2-125 (10)

DEHYDROGENATION
9-195 (8, 9, 10)
9-270 (8, 10)
11-189 (10)

DELAYED COKING PROCESS
9-185 (9)

DELEGATION
5-235 (7)

DELIVERY
6-141 (6)

DEMAND
2-175 (7)

DEMINERALIZING
9-240 (8, 9, 10)
9-255 (8, 10)
9-260 (8, 9, 10)

DENSITY
1-135 (7)
1-139 (7)
2-158 (7)
2-161 (7)
3-137 (7)
3-141 (7)
3-161 (7)
4-161 (7)
4-165 (7)
6-153 (7)
6-200 (7)
7-111 (7)
10-171 (7)
11-145 (8)
11-180 (8)

DEOILING
2-125 (10)

DEPOSITS
8-141 (10)

DESALTING
8-141 (6)

DESICCANTS
2-125 (10)
3-170 (10)
4-131 (10)

DESIGN
2-129 (4)
2-143 (8)
3-157 (8)
4-194 (8)
5-175 (8)
5-198 (4, 8)
6-123 (8)
6-131 (8)
6-137 (8)
6-181 (9)
7-109 (8)
7-133 (4)
8-145 (8)
10-114 (7)
10-119 (4)
10-140 (4)
11-211 (8)
11-218 (8)
12- 88 (8)
12-107 (8)
12-109 (8)
12-135 (4)
12-137 (8)

DESULFURIZATION
4-203 (4)
9-254 (8, 10)
9-261 (8, 9, 10)
9-262 (8, 10)
9-268 (8, 9, 10)

DETECTION
7-130 (8)

DETECTORS
7-130 (10)

DETERGENTS
11-197 (4)

DETERMINATION
12-127 (7)

DETONATIONS
5-227 (9)

DEVELOPING
1-167 (8)
4-180 (9)
5-184 (10)
7-145 (8)
10-199 (8)

DEVELOPMENTS
8-102 (8)
8-111 (8)
8-115 (8)
8-120 (8)
8-173 (8)
9-311 (8)

DEWATERS
2-125 (10)

DEW POINT
6-171 (7)

DIAGRAMMING
9-297 (8)

DIAGRAMS
1-115B (10)
3-173 (10)
10-114 (10)
10-165 (10)
12- 88 (10)

DIAMETER
12-137 (6)

DICHLOROBENZENE
11-177 (3)

1,2-DICHLOROETHANE
7-111 (9)

1,2-DICHLOROPROPANE
7-111 (9)

DIELECTRIC
11-180 (7)

DIETHANOLAMINE
7-125 (10)
9-261 (10)

DIETHYLENE GLYCOL
6-171 (10)
9-262 (10)

DI-ME SOLVENT DEWAXING PROCESS
9-222 (9)

DIMETHYL ETHER
11-195 (1)

DIMETHYL FORMAMIDE
11-155 (5)

2, 4-DIMETHYLPENTANE
12-103 (1, 2)

DIMETHYLSULOXIDE
5-188 (5, 10)
9-223 (10)

DINITROTOLUENE
11-177 (3)

DIP ALKYLATION PROCESS
9-205 (9)

DISCUSSION
8-111 (10)

DISSOLVING
9-234 (8, 9, 10)

DISTANCE
6-186 (6)

DISTILLATE HYDROGENATION PROCESS
9-240 (9)

DISTILLATE TREATING PROCESS
9-258 (9)

DISTILLATION
3-173 (9)
6-144 (10)
6-167 (6, 8)
8-141 (4)
8-155 (7, 9)
9-271 (8, 10)
10-193 (9)
11-151 (10)
12-103 (8, 9, 10)
12-135 (4)

DISTRIBUTION
12-132 (8)

DISTRIBUTORS
11-211 (9)

DISTURBANCES
2-105 (6)
8-151 (6)

DISULFIDES/ORGANIC/
11-225 (2)

DMSO EXTRACTION PROCESS
9-223 (9)

DOCUMENTS
4-159 (9)

DOSAGES
7-133 (6)

DRAWING/SKETCHING/
9-297 (8)
10-119 (10)

DRIVERS
4-131 (4)

DRUMS/CONTAINERS/
10-119 (9)

DRYERS
2-125 (10)

DRYING
2-125 (8)
3-170 (8, 10)
4-131B (8)
5-181 (6)
9-254 (8, 10)

DUCTILITY
9-291 (7)

DUO-SOL PROCESS
9-224 (9)

DUSTS
4-145 (3, 9)

DYNAMIC PROGRAM
12-132 (0)

EARNINGS
4-169 (7)

ECONOMICS
1-143 (6)
2-137 (6)
2-175 (6)
3-149 (6)
3-181 (10)
4-149 (6)
4-169 (4, 7)
4-180 (7)
4-199 (8)
5-140 (7)
5-165 (8)
5-193 (8)
6-186 (6)
7-145 (10)
8-125 (6)
9-325 (6)
10-143 (6)
11-171 (8)
12-123 (7)
12-132 (4, 7, 9)

EDUCATION
3-189 (7)
4-216 (8)

EDUCATORS
5-170 (9)

EFFICIENCY
4-194 (6)
6-131 (6)
6-217 (10)
8-137 (7)
11-229 (6)
11-233 (6)

EFFLUENT REFRIGERATION ALKYLATION PROCESS
9-205 (9)

EFFLUENTS
7-130 (9)

EJECTORS
10-165 (9)

ELECTRICAL DISTILLATE TREATING PROCESS
9-259 (9)

ELECTRICAL ENGINEERING
1-153 (9)

ELECTRICAL PROPERTIES
11-180 (8)

ELECTRICIANS
8-164 (9)

ELECTRICITY
4-207 (10)
5-193 (7)

ELECTRONIC
8-164 (4)

ELECTROPHORESIS
9-258 (10)
9-259 (8, 9, 10)
9-260 (8, 9, 10)

ELEVATION
10-114 (10)
10-119 (6)

EMBRITTLEMENT
9-291 (10)
10-135 (7)
10-158 (6)

EMPATHY
4-211 (7)

EMPLOYES
4-211 (6)
4-216 (9)
5-235 (7)
7-147 (9)
8-102 (9)
8-108 (9)
8-115 (9)
8-120 (9)
8-164 (9)
9-317 (6)
9-325 (6)
10-199 (9)
12-158 (9)
12-141 (9)
12-152 (7)

EMPLOYMENT
3-189 (6)
11-229 (6)
11-235 (6)

EMULSIFIERS
8-141 (6)

EMULSIONS
8-141 (10)

ENERGY
7-119 (7)

ENGINEERING
1-167 (9)
6-186 (4)
10-140 (10)

ENGINEERS
4-211 (6)
4-216 (9)
7-147 (9)
8-102 (9)
8-108 (9)
8-115 (9)
8-120 (9)
12-152 (7)

ENGINES
1-128 (9)
9-303 (9)

ENTHALPY
1-135 (7)
1-139 (7)
2-158 (7)
2-161 (7)
3-137 (7)
3-141 (7)
3-161 (7)
4-161 (7)
4-165 (7)
5-222 (7)
6-153 (7)
6-161 (7)
6-189 (8)
7-111 (7)
8-167 (7)
10-171 (7)

ENTROPY
1-135 (7)
1-139 (7)
2-158 (7)
2-161 (7)
3-137 (7)
3-141 (7)
3-161 (7)
4-161 (7)
4-165 (7)
6-153 (7)
7-111 (7)
10-171 (7)

EPOXY PLASTICS
1-128 (10)
7-83 (9)

EQUATION OF STATE
6-161 (10)

EQUATIONS
1-157 (10)
3-173 (10)
4-173 (10)
4-194 (10)
5-198 (10)
5-215 (10)
6-123 (10)
6-191 (10)
6-200 (10)
8-165 (10)
12-109 (10)
12-137 (10)

EQUILIBRIUM
5-215 (9)
6-189 (7)
8-155 (6)
11-189 (6)
11-205 (7)

EQUIPMENT
1-157 (9)
5-238 (6)
10-119 (9)

ESCALATION
1-157 (7)

ESPIONAGE
12-152 (6)

ESTERIFICATION
6-203 (4)

ESTERS
1-128 (10)
6-167 (9)
9-237 (10)

ESTIMATES
1-119 (6)

ESTIMATING
1-119 (8)
1-153 (8)
1-157 (4)
3-173 (4)
3-181 (10)
4-173 (4)
5-198 (4, 8)
5-222 (4)
6-161 (4)
6-189 (4)
6-191 (4)
6-200 (4)
7-137 (4)
8-165 (4)
8-167 (4)
10-161 (4)

ETHANE
1-134 (9)
3-135 (9)
6-195 (1, 9)
12-113 (9)

ETHANOL
10-143 (9)
10-171 (9)

ETHANOLAMINE
9-261 (10)

ETHERS
1-126 (10)

ETHYLBENZENE
5-205 (9)
12-103 (1, 2)

2-ETHYL-1-BUTENE
12-103 (1, 2)

ETHYLENE
1-134 (9)
3-135 (4)
3-156 (9)
4-187 (2)
4-199 (9)
6-195 (2)
9-277 (1)
10-143 (9)
11-171 (1)
12-113 (9)

ETHYLENEDIAMINETETRA-ACETIC ACID
11-197 (9)

ETHYLENE DICHLORIDE
9-222 (10)
9-234 (10)

ETHYLENE GLYCOL
4-131B (10)

ETHYLENE OXIDE
10-143 (9)

EUROPE
2-175 (9)
4-134 (9)
6-210 (9)

EUROPEAN
5-238 (6)
10-127 (0)

EVALUATING
5-184 (10)

EVALUATION
1-123 (10)
4-169 (4)
5-184 (10)
5-219 (4, 8)
6-141 (8)
6-217 (8)
7-147 (8)
8-102 (8)
8-115 (8)
8-120 (8)
8-137 (8)
8-173 (10)
9-311 (10)
10-135 (8)
10-183 (8)
12-127 (4)

EXAMINING
5-227 (8)
8-164 (6)

EXCHANGERS
1-107 (9)
4-137 (10)
5-181 (9)
6-116 (4, 9)
6-123 (9)
6-131 (9)
6-137 (9)
6-141 (4, 9)
8-137 (10)
6-141 (4, 9)
8-137 (10)
8-141 (9)
8-145 (10)
9-285 (9)
10-119 (9)
10-158 (9)
11-211 (9)

EXPANDERS
4-131 (10)
6-144 (10)
8-137 (10)

EXPANSION
5-238 (6)
10-114 (6)
10-158 (6)

EXPENDITURES
1-172 (9)
2-167 (9)
3-181 (8)
5-187 (10)
12-132 (9)

EXPLOSIONS
4-207 (8)
5-227 (9)

Extracting
4-131 (8)

Extraction
5-188 (8, 10)
6-144 (8)
7-133 (7, 8, 9)
9-222 (8, 9, 10)
9-223 (8, 9, 10)
9-224 (8, 9, 10)
9-225 (8, 9, 10)
9-226 (8, 9, 10)
9-227 (8, 9, 10)
9-228 (8, 9, 10)
9-229 (8, 9, 10)
9-230 (8, 10)
9-231 (8, 9, 10)
9-232 (8, 9, 10)
9-233 (8, 9, 10)
9-234 (8, 9, 10)
9-235 (8, 10)
9-236 (8, 9, 10)
9-237 (8, 9, 10)
9-238 (8, 10)
9-239 (8, 9, 10)
11-151 (4)
12-107 (8, 9)

Extrusion
11-155 (10)

Factors
6-116 (9)
8-141 (7)

Failures
1-131 (7, 8)
9-291 (8)
10-140 (6)

Fastening
10-158 (9)

Fatty Acids
9-272 (1)

Ferrofining Process
9-240 (9)

Filing
4-159 (8)

Fillers
11-155 (1)
4-207 (10)

Films
11-155 (2)

Filters
4-137 (10)
4-145 (10)
9-285 (10)

Filtration
9-239 (8, 9, 10)
9-256 (8, 9, 10)

Financing
5-238 (7)

Fins
6-131 (9)

Fire
5-227 (9)
12-141 (9)

Firing
11-221 (8, 9, 10)

Flames
4-207 (8)

Flanges
10-158 (9)

Flashing
11-218 (6)

Flexure
12-109 (7)

Flow
3-173 (7)
5-170 (6)
6-137 (6)
6-141 (6)
8-141 (6)
8-151 (6)
8-165 (6, 7)
10-114 (6)
10-119 (6)
11-211 (6)
12-137 (7)

Flow Sheets
9-297 (4)
10-114 (10)

Flowing
1-128 (10)

Fluid Catalytic Cracking Process
9-185 (9)

Fluid Catalytic Cracking, Model IV Process
9-185 (9)

Fluid Catalytic Cracking, Orthoflow Process
9-185 (9)

Fluid Coking Process
9-185 (9)

Fluid Flow
8-165 (6, 7)

Fluidizing
11-146 (10)

Fluids
2-125 (9)
4-194 (5)
6-167 (9)
6-200 (9)
7-137 (9)
9-303 (7)
10-114 (6)
10-161 (9)
11-211 (6)
12-137 (6)

Fluorides/Inorganic/
1-107 (6)
11-155 (10)

Fluorinated Hydrocarbons
7-83 (9)

Fluorine
11-155 (1)

Foaming
4-137 (3)

Footings
1-109 (7)

Force/Energy/
12-109 (7)

Forecasting
1-143 (10)
1-157 (4)
1-161 (8)
2-137 (10)
3-149 (10)
4-149 (10)
5-198 (4)
5-205 (10)
5-215 (8)
7-83 (4)
7-119 (4)
8-125 (10)
8-155 (4)
9-281 (4)
10-143 (10)

Foremen
1-101 (9)

Foreign
4-216 (10)

Formaldehyde
6-195 (2)
11-155 (1)
11-195 (2)

Forms/Stationery/
1-119 (10)

Formulas
12-135 (10)

Fouling
8-141 (8)

Foundations
7-109 (9)
12-109 (4)

Freezing
4-183 (6)
12-97 (8, 10)

French
10-127 (0)

Friction
12-137 (6)

Fuels
3-129 (1, 2)
4-134 (4)
4-183 (9)
4-207 (9)
5-145 (1, 2)
5-153 (1, 2)
5-159 (1, 2)
5-165 (2, 4)
5-193 (1)
7-103 (1, 2)
7-119 (6)
8-151 (6)
8-168 (1, 2)
9-303 (6)
9-177 (1, 2)
9-185 (1, 2)
9-195 (1, 2)
9-213 (1, 2)
9-225 (1, 2)
9-232 (1, 2)
9-240 (1, 2)
9-258 (1, 2)
9-259 (1, 2)
9-266 (1, 2)
9-271 (2)
9-273 (1)
9-276 (1, 2)
11-221 (1)

Fugacity
1-135 (7)
1-139 (7)
2-158 (7)
2-161 (7)
3-137 (7)
3-141 (7)
4-161 (7)
4-165 (7)
4-168 (7)

Fumes
9-303 (7)

Furfural
7-133 (5)
9-225 (10)
9-226 (10)

Furfural Extraction of Gas Oils Process
9-225 (9)

Furfural Refining Process
9-226 (9)

Future
1-143 (7)
2-137 (7)
3-149 (7)
4-149 (7)
5-205 (7)
8-125 (7)
10-143 (7)

Gages
1-107 (9)

Galling
10-158 (6)

Gases
2-125 (9)
2-175 (7)
3-129 (1, 2)
3-170 (9)
4-194 (5)
5-145 (2)
5-153 (2)
5-159 (2)
7-103 (2)
7-119 (6)
8-137 (1)
8-145 (1)
9-303 (7)
9-177 (2)
9-185 (2)
9-195 (2)
9-213 (2)
9-240 (2)
9-261 (1, 2)
9-262 (1, 2)
9-271 (2)
9-274 (1, 2)
9-275 (1, 2)
9-276 (1, 2)
10-165 (1)

Gasifying
5-165 (10)
8-145 (4)

Gaskets
10-158 (9)

Gasoline
3-129 (2)
4-207 (9)
5-145 (2)
5-153 (2)
5-159 (2)
6-144 (2)
6-195 (1, 9)
7-103 (2)
8-168 (2)
9-303 (6)
9-177 (2)
9-185 (2)
9-195 (2)
9-205 (2)
9-213 (2)
9-223 (1, 2)
9-235 (1, 2)
9-236 (1, 2)
9-240 (2)
9-257 (1)
9-258 (1, 2)
9-263 (1, 2)
9-264 (1, 2)
9-266 (1, 2)
9-267 (1, 2)
9-268 (1, 2)
9-271 (2)
9-275 (2)
9-276 (1, 2)

Gels
3-170 (10)

German
6-186 (0)
10-127 (0)

Germanium
12-97 (1, 2)

Glands
1-131 (9)

Glass Fibers
1-126 (10)

Glycol-Amine Gas Treating Process
9-262 (9)

Glycols
6-171 (10)
9-236 (10)
9-262 (10)

Graphs
3-173 (10)
5-215 (10)
5-222 (10)
6-116 (10)
6-131 (10)
6-191 (10)
6-200 (10)
7-137 (10)
8-165 (10)
10-161 (10)
12-88 (10)
12-107 (10)
12-109 (10)

Grease Manufacturing Process
9-272 (9)

Grouting
1-128 (8)

Growing
5-238 (6)
9-281 (7)

Guarantees
4-180 (7)
6-141 (6)

Gulf HDS Process
9-240 (9)

Gulfinishing Process
9-240 (9)

Gulf Hydrotreating Process
9-240 (9)

Guying
2-143 (6)

Halides/Inorganic/
8-168 (10)
9-205 (10)
9-213 (10)
9-257 (5)
11-155 (10)

Halogenated Hydrocarbons
9-222 (10)

Halogens
11-189 (10)
11-225 (1, 2)

Hazards
4-180 (7)
10-140 (7)

H-Coal Process
5-165 (10)

H-Oil Process
5-165 (10)

HDA Process
5-140 (8, 9, 10)

Health
4-211 (7)

Heat
3-161 (7)
4-173 (7)
6-153 (7)
6-191 (7)
7-111 (7)
7-119 (7)
8-141 (6)
9-271 (10)
10-171 (7)
11-180 (6)
12-113 (7)

Heat Balances
8-155 (6)

Heaters
1-107 (9)
4-131 (10)
8-151 (9)
9-291 (4)

Heat Exchangers
1-107 (9)
4-137 (10)
6-116 (4, 9)
6-131 (9)
6-137 (9)
6-141 (4, 9)
8-137 (10)
8-141 (9)
8-145 (10)
9-285 (9)
10-158 (9)
11-211 (9)

Heating
6-116 (6)
10-158 (6)

Heat Transfer
2-125 (10)
6-116 (6)
6-123 (7)
6-137 (6)
6-141 (6)
6-181 (6)
8-137 (10)
8-145 (10)
9-234 (10)
9-238 (10)
9-239 (10)
11-211 (7)

Heat Treating
9-291 (6)
10-135 (6)
12-144 (6)

Height
10-189 (6)
12-135 (6, 7)

n-Heptane
6-189 (9)
12-103 (1, 2)

Hexane
6-189 (9)
6-191 (9)
8-168 (1)
9-213 (1)
12-103 (1, 2)

Hexene-1
12-103 (1, 2)

HF Alkylation Process
9-205 (9)

H-G Hydrocracking Process
5-159 (9)
9-177 (9)

H-Oil Process
5-153 (9)
9-177 (9)

Homogenizing
8-141 (6)

Hot Carbonate
7-125 (10)

Hot-Spots
10-158 (6)

Houdriflow Process
9-185 (9)

Houdriforming Process
9-195 (9)

Houdry Cat-D-1 Method
10-183 (0)

Human Relations
2-171 (6)
5-235 (7)

Humidity
11-180 (6)

Hy-C Process
9-177 (9)

Hydrates
6-144 (3)
6-171 (3)

Hydraulics
6-167 (4)

Hydrocarbons
2-175 (6)
4-173 (9)
4-183 (9)
4-187 (2)
4-207 (9)
5-140 (1, 2)
5-145 (2)
5-153 (2)
5-159 (1, 2)
5-188 (1)
5-205 (9)
5-222 (9)
5-238 (7)
6-144 (2)
6-161 (9)
6-167 (9)
6-189 (9)
6-191 (9)
6-195 (1, 9)
6-210 (6)
7-103 (2)
7-137 (9)
8-125 (9)
8-137 (1, 2)
8-167 (7)
8-168 (1, 2)
9-177 (1, 2)
9-185 (2)
9-195 (2)
9-205 (1, 2)
9-213 (1, 2)
9-223 (1, 2)
9-235 (1, 2)
9-236 (1, 2)
9-240 (2)
9-254 (1, 2)
9-257 (1, 2)
9-258 (1, 2)
9-259 (1,2)
9-261 (1, 2)
9-262 (1, 2)
9-263 (1, 2)
9-264 (1, 2)
9-266 (1, 2)
9-267 (1, 2)
9-268 (1, 2)
9-270 (1, 2)
9-271 (2)

DEPARTMENTS: Subjects covered monthly

- Books, New
- Mail Box
- Suppliers
- Equipment, New
- Men
- What's Happening
- How to Do It
- Newsletter
- Who's Building

9-275 (2)
9-276 (1, 2)
9-277 (5)
9-303 (6)
10-161 (9)
10-189 (1, 2, 9)
11-155 (1)
11-174 (1)
12-88 (1, 2)
12-97 (1, 2)
12-103 (1, 2, 6)

HYDROCRACKING
3-129 (8, 9, 10)
3-157 (4)
5-153 (8, 9, 10)
5-159 (8, 9, 10)
5-165 (10)
7-103 (8, 9, 10)
9-177 (9)

HYDRODESULFURIZATION PROCESS
9-240 (9)

HYDROFINING PROCESS
9-240 (9)

HYDROFLUORIC ACID
1-107 (5, 9)

HYDROGEN
2-161 (9)
3-129 (1)
3-157 (5)
5-140 (1)
5-149 (1)
5-149 (1)
5-153 (1)
5-159 (1)
5-165 (1)
5-201 (5)
7-103 (1)
8-168 (1)
9-177 (1)
9-195 (1, 2)
9-213 (1)
9-240 (1)
9-273 (2)
9-274 (2)
10-135 (6)
11-174 (1)

HYDROGENATION
2-148 (10)
3-129 (8, 9, 10)
3-157 (4)
4-203 (4)
5-144 (8, 9, 10)
5-153 (8, 9, 10)
5-159 (8, 9, 10)
5-165 (9, 10)
5-181 (4)
5-201 (4)
7-103 (8, 9, 10)
9-177 (8, 9, 10)
9-195 (8, 9, 10)
9-240 (8, 9, 10)
11-174 (10)
11-177 (10)

HYDROGEN CHLORIDE/ ANHYDROUS/
11-177 (1)

HYDROGEN, PARTIAL OXIDATION PROCESS
9-273 (9)

HYDROGEN, STEAM REFORMING PROCESS
9-274 (9)

HYDROGEN SULFIDE
3-157 (5)
4-131 (3)
4-137 (3)
4-203 (1)
6-181 (1)
7-125 (3, 6)
9-240 (3)
9-254 (3)
9-262 (3)
9-285 (10)

HYDROXIDES
9-268 (10)
11-225 (1)

IDEAS
1-167 (10)
10-203 (9)
10-207 (9)

IDENTIFICATION
9-297 (8)

IFP HYDROGENATION PROCESS
9-240 (9)

IGNITION
4-207 (8)

ILLNESS
4-211 (7)

IMPACT STRENGTH
12-144 (7)

INCINERATORS
1-107 (9)

INCOLOY 800
5-181 (9)

INDEX/FACTORS OR RATIOS/
1-157 (7)

INDEXING/FILE/
4-159 (10)

INDUSTRY
2-175 (6)
12-152 (7)

INFORMATION
6-207 (9)
10-203 (9)

INHIBITORS
5-181 (6)
9-263 (10)

INHIBITOR SWEETENING PROCESS
9-263 (9)

INITIATORS
11-155 (10)

INJECTION
6-171 (10)

INNOVATION
6-217 (10)
10-207 (8)

INORGANIC
1-135 (8)
1-139 (8)
2-158 (9)
2-161 (8)
3-137 (8)
3-141 (8)
4-161 (8)
4-165 (8)
4-173 (9)

INPUT
3-129 (6)
5-145 (6)
5-149 (6)
5-153 (6)
5-159 (6)
6-181 (6)
7-103 (6)
7-133 (6)
8-168 (6)
9-177 (6)
9-185 (6)
9-195 (6)
9-205 (6)
9-213 (6)
9-222 (6)
9-223 (6)
9-224 (6)
9-227 (7)
9-228 (6)
9-229 (6)
9-231 (6)
9-232 (6)
9-234 (6)
9-236 (6)
9-237 (6)
9-240 (6)
9-256 (6)
9-265 (6)
9-276 (6)
11-221 (6)

INSPECTION
5-170 (8)
5-175 (10)

INSTRUCTING
1-104 (8)

INSTRUCTION
4-216 (8)
12-141 (10)
12-158 (8)

INSTRUMENTATION
1-107 (9)
2-105 (9)
2-125 (4)
8-145 (10)
8-151 (8)
8-164 (4)
9-297 (9)
10-114 (6)
10-140 (9)
10-165 (8)

INSULATING/PROCESS/
2-153 (9)

INSULATION/MATERIALS/
3-157 (8)

INSULATORS
10-114 (6)

INTEREST
3-181 (10)

INTERGRANULAR CORROSION
10-135 (7)

INTERVIEWS
1-115 (10)
8-102 (10)
8-108 (10)
8-111 (10)
8-115 (10)
8-120 (10)

INVENTIONS
10-207 (8)

INVESTMENTS
2-175 (7)
3-129 (7)
3-181 (8)
4-134 (8)
4-169 (5, 7)
4-199 (7)
5-145 (7)
5-149 (7)
5-159 (7)
5-238 (6)
8-168 (7)
9-177 (7)
9-185 (7)
9-195 (7)
9-205 (7)
9-213 (7)
9-228 (7)
9-232 (7)
9-233 (7)
9-239 (7)
9-240 (7)
9-258 (7)
9-260 (7)
9-267 (7)
9-274 (7)
11-171 (6)
12-123 (6)
12-132 (9)

IODINE
11-189 (10)

IODOFORM
6-200 (9)

IRON
1-126 (9)

IRON ALLOYS
5-181 (9)
5-201 (9)
10-127 (9)
10-135 (9)
12-144 (9)

ISOBUTANE
5-145 (2)
7-103 (2)
9-205 (1)
9-213 (2)
12-88 (1, 2)

ISOCYANATES
7- 83 (9)

ISOMAX PROCESS
9-177 (9)

ISOMERATE PROCESS
9-213 (9)

ISOMERIZATION
5-159 (8, 9, 10)
7-103 (8, 9, 10)
8-168 (8, 9, 10)
9-177 (8, 9, 10)
9-195 (8, 9, 10)
9-213 (9)

ISOMERS
8-168 (2)
9-276 (2)
11-177 (3)

ISOPENTANE
8-168 (2)
11-189 (1)
12- 88 (1, 2)

ISOPRENE
11-189 (2)

ISOPLUS HOUDRIFORMING PROCESS
9-195 (9)

ITALIAN
10-127 (0)

ITERATION
8-155 (6)

IZOD-IMPACT STRENGTH
11-180 (8)

JACKETING
1-126 (8)

JETS
4-207 (9)
10-165 (10)

JOBS
1-119 (9)
2-171 (6)

JOINING
10-127 (6)
10-135 (6)
10-158 (9)

JUDGMENT
7-147 (10)

KEROSINE
3-129 (2)
4-183 (9)
5-145 (2)
5-153 (2)
9-257 (1, 2)
9-258 (1, 2)
9-266 (1, 2)
9-271 (2)
9-276 (1, 2)
11-225 (1, 2)

KETONES
6-195 (2)
9-233 (10)
9-239 (10)
12-107 (2)

LABOR
1-104 (9)
1-153 (9)
9-317 (6)

LAMINAR FLOW
6-123 (6)

LANGUAGE
4-216 (10)

LATENT
4-173 (7)
6-191 (7)

LAYERS
3-157 (10)

LAYOUT
10-114 (7)
10-119 (8)
11-211 (6)

LEAKAGE
6-161 (0)
10-158 (7)
11-211 (7)

LENGTH
11-211 (6)
11-218 (6)
12-135 (6, 7)
12-137 (6)

LETTERS
9-287 (10)

LIGHT HYDROCARBON RECOVERY PROCESS
9-275 (9)

LINEAR PROGRAMING
10-193 (10)

LINING
2-143 (6)
3-157 (8)
10-135 (9)

LIQUEFIED PETROLEUM GAS
5-145 (2)
9-254 (1, 2)

LIQUEFYING
8-137 (9)
8-145 (7)

LIQUID PHASE
1-135 (5)
1-139 (5)
1-142 (9)
2-157 (9)
2-158 (5)
2-161 (5)
3-137 (5)
3-141 (5)
3-161 (5)
4-161 (5)
4-165 (5)
5-188 (5)
6-153 (5)
7-111 (5)
10-171 (5)
11-205 (5)
12-113 (5)

LIQUID-PHASE ISOMERIZATION PROCESS
9-213 (9)

LIQUIDS
4-131A (2, 8)
4-145 (3, 9)
5-222 (9)
6-144 (9)
6-161 (9)
6-189 (9)
6-195 (9)
6-200 (9)
7-137 (9)
8-137 (2)
8-145 (2)
8-167 (9)
10-161 (9)
10-189 (2, 9)
11-211 (6)

LISTENING
10-203 (10)

LISTS
1-115 (10)

LITERATURE
4-159 (9)
5-227 (10)

LITHIUM
9-277 (10)

LOADING
1-131 (7)
4-207 (10)

LOADS
7-109 (6)

LOCATIONS
10-119 (8)

LOOPS
8-151 (10)
9-297 (7)
12-137 (4)

LOSSES
6-123 (6)
11-211 (7)

LOUISIANA
3-135 (9)

LUBRICANTS
5-149 (1, 2)
6-167 (9)
9-222 (1, 2)
9-226 (10)
9-227 (1, 2)
9-228 (1, 2)
9-229 (1, 2)
9-230 (1, 2)
9-231 (1, 2)
9-233 (1, 2)
9-240 (1, 2)
9-256 (1, 2)
9-259 (1, 2)
9-265 (1, 2)
9-271 (2)
9-272 (1, 2)

LUBRICATION
6-167 (4)

MAINTENANCE
1-104 (4)
1-107 (7, 8)
1-115 (4)
1-119 (4)
1-123 (9)
1-126 (8)
1-131 (8)
3-126 (4)
4-137 (8)
5-170 (7)
5-175 (8)
5-187 (9)
6-171 (8)
8-164 (4)
9-177 (7)
9-185 (7)
9-195 (7)
9-213 (7)
9-225 (7)
9-226 (7)
9-228 (7)
9-232 (7)
9-233 (7)
9-239 (7)
9-240 (7)
9-258 (7)
9-259 (7)
9-260 (7)
9-264 (7)
9-266 (7)
9-267 (7)
9-274 (7)

MANAGEMENT
8-102 (4)
8-108 (4)
8-115 (4)
8-120 (4)
9-317 (4, 7)
9-325 (4, 6)

MANAGERS
5-184 (9)
5-235 (6)

MANAGING
2-167 (8)
3-181 (8)

MANUFACTURING
1-143 (6)
1-137 (6)
3-149 (6)
4-149 (6)
5-205 (6)
8-125 (6)
10-143 (6)

MARKETS
1-143 (6)
2-137 (6)
3-135 (8)
3-149 (6)
4-149 (6)
5-205 (6)
7-145 (9)
8-125 (6)
8-173 (9)
9-311 (9)
10-143 (6)

MARSHALL-STEVENS
1-157 (0)

MATERIAL BALANCES
2-153 (10)

MATERIALS
1-153 (9)
6-141 (6)

MATHEMATICS
2-105 (10)
2-153 (10)
5-219 (10)
8-155 (10)
10-193 (10)

MATRICES
8-155 (10)
10-193 (10)

MATRIX MATHEMATICS
8-155 (10)
10-193 (10)

MCCABE-THIELE
3-173 (0)

MEASUREMENT
1-123 (10)
5-187 (8)
6-217 (8)
12-135 (6, 7)

MECHANICAL PROPERTIES
3-157 (7)
5-170 (6)
5-201 (7)
9-291 (7)
10-127 (6)
10-135 (7)
11-180 (8)
12-144 (7)

MECHANICS/CRAFTSMEN/
1-104 (9)
8-164 (9)

MEETINGS
1-115 (10)
12-158 (4)

MELAMINE
5-218 (2)
9-302 (2)
11-146 (2)

MELTING
12- 97 (8, 10)

MELTING POINTS
11-145 (8)

MENTAL
4-211 (7)

MERCAPTANS
4-203 (1)
9-254 (3)
9-257 (3)
9-263 (3)
9-264 (3)
9-266 (3)
9-267 (3)
9-268 (3)
11-225 (3)

MEROX PROCESS
9-264 (9)

METALLURGY
10-127 (6)

METALS
1-126 (9)
2-148 (10)
5-181 (9)
5-201 (10)
9-195 (10)
9-213 (10)
10-127 (9)
10-135 (9)
12-97 (1, 2)
12-144 (9)

METERS
3-126 (10)
5-170 (10)

METHANE
1-134 (9)
8-137 (1)
10-189 (1, 2)
11-155 (1)
12-113 (9)

METHANOL
6-144 (10)
6-189 (9)
6-195 (2)
6-200 (9)
8-167 (9)
10-171 (9)

METHODS
1-143 (6)
1-167 (9)
2-137 (6)
3-149 (6)
4-149 (6)
5-217 (9)
8-125 (6)
10-143 (6)
10-183 (10)

METHYL ANILINE
6-200 (9)

METHYL N-BUTYRATE
6-200 (9)

METHYL CHLORIDE
3-161 (9)

METHYLCYCLOHEXANE
12-103 (1, 2)

METHYLENE CHLORIDE
3-161 (9)
9-222 (10)

METHYL ETHYL KETONE
9-233 (10)

METHYL ISOBUTYL KETONE
9-239 (10)

3-METHYLPENTANE
12-103 (1, 2)

MICROSTRUCTURES
12-144 (7)

MINIMUM
3-173 (0)

MIXING
4-207 (10)
6-123 (6)

MIXTURES
5-222 (9)
6-161 (9)
6-189 (9)
10-161 (9)
11-205 (9)
11-211 (6)
12-103 (1, 6)

MODIFICATIONS
9-303 (10)
10-183 (10)

MOLECULAR
3-170 (10)
11-145 (8)

MOLECULAR SIEVES
8-145 (10)
9-254 (5)
9-276 (10)

MOLECULAR WEIGHT
1-142 (6)
2-157 (6)
6-191 (6)
9-277 (7)
10-114 (6)

MOLEX PROCESS
9-276 (9)

MOLYBDENUM ALLOYS
5-201 (9)

MOMENTS
7-109 (7)
12-109 (6)

MONEY
3-181 (9)
5-238 (7)

MONITORING
7-130 (8)

MONITORS
7-130 (10)

MONOETHANOLAMINE
4-131 (10)
4-137 (5, 9)
7-125 (7, 10)
9-285 (4)
9-262 (10)

MONOMERS
11-155 (1)

MOTORS
3-126 (9)

MULTILAYER
3-157 (10)

NAPHTHA
3-129 (2)
4-187 (1)
4-207 (9)
5-145 (2)
5-153 (2)
5-159 (2)
7-103 (2)
9-177 (2)
9-185 (2)
9-195 (1, 2)
9-213 (2)
9-240 (2)
9-259 (1, 2)
9-270 (2)

NAPHTHALENE
3-149 (9)
5-205 (9)

NATURAL
2-175 (7)

NATURAL FREQUENCY
2-143 (7)

NATURAL GASES
4-131 (1, 2, 9)
4-134 (9)
4-137A (1, 2)
4-145 (1, 2)
6-144 (2)
6-171 (1, 2)
6-195 (1,9)
6-210 (7)
8-145 (1, 2)
9-285 (4)
9-274 (1)
9-275 (1)
10-189 (1, 2)
12-88 (1, 2)

NEOHEXANE
12-103 (1, 2)

NEOPRENE
8-125 (9)

NETWORKS
12-137 (4)

NEUTRALIZATION
1-107 (6)
5-181 (6)

NICKEL
9-240 (3)

NICKEL ALLOYS
5-181 (9)

NITRATION
11-177 (10)

NITRILES
8-125 (9)

NITRIC ACID
11-177 (1)
11-183 (2)

NITRILOTRIACETIC ACID
11-197 (9)

NITROBENZENE
7-133 (5)

NITROGEN
3-137 (9)
9-240 (3)
11-205 (9)

NOMOGRAPHS
1-134 (10)
1-142 (10)
2-129 (10)
2-157 (10)
3-145 (10)
3-156 (10)
4-168 (10)
6-131 (10)
7-137 (10)
10-161 (10)

NONIDEAL
4-194 (0)

NORMALIZING
12-144 (6)

NORTH SEA
6-210 (9)

NYLON PLASTICS
7-83 (9)

OCCUPATION
11-229 (6)
11-235 (6)

OCTANE
6-191 (9)

OILS
3-129 (1, 2)
3-157 (5)
4-145 (10)
4-183 (9)
4-207 (9)
5-145 (2)
5-149 (1, 2)
5-153 (1)
5-159 (1, 2)
7-103 (1)
7-119 (6)
7-133 (1)
9-185 (1, 2)
9-222 (1, 2)
9-225 (1, 2)
9-226 (10)
9-227 (1, 2)
9-228 (1, 2)
9-229 (1, 2)
9-230 (1, 2)
9-231 (1, 2)
9-232 (1, 2)
9-233 (1, 2)
9-234 (1, 3)
9-237 (1, 2)
9-238 (3)
9-239 (3)
9-240 (1)
9-255 (1, 2)
9-256 (1, 2)
9-258 (1, 2)
9-259 (1, 2)
9-260 (1, 2)
9-265 (1, 2)
9-266 (1, 2)
9-271 (1, 2)
9-272 (1)
9-273 (1)
11-221 (1)
11-225 (1, 2)

OLEFINS
6-195 (2)
9-205 (1, 2)
9-231 (3)
9-240 (1)
12-113 (9)

OPERATING
1-107 (7, 8)
4-137 (8)
6-171 (8)
12-123 (6)

OPERATIONS
2-105 (7)
6-181 (9)
9-257 (7)
10-114 (6)
10-158 (6)

OPERATORS
10-199 (9)

OPTIMIZATION
6-181 (4, 7, 8)
10-193 (8)
12-107 (7)
12-132 (4)

ORDERS
1-123 (10)

ORGANIC
4-173 (9)

ORGANIZATIONS
5-227 (10)
6-207 (10)

ORGANIZING
10-199 (10)

ORGANOMETALLICS
9-277 (10)
11-155 (10)

ORIFICES
11-218 (9)

OUTLINES
6-207 (10)

OXIDATION
5-193 (10)
6-167 (7)
9-263 (8, 10)
9-273 (8, 10)
10-135 (6)
11-183 (10)

OXIDES/INORGANIC/
3-170 (10)
4-137 (3)
7-125 (3)
7-133 (5)
9-231 (10)
9-261 (3)
9-262 (3)
10-146 (10)
10-189 (10)

OXYGEN
3-141 (9)
4-187 (1)
6-181 (1)
9-240 (3)
9-257 (10)
9-273 (1)
11-183 (1)

PACKAGING
4-180 (6)

PACKINGS
1-128 (10)
8-165 (9)

PALLADIUM
11-171 (10)

PARAFORMALDEHYDE
11-155 (1)

PARALDEHYDE
11-155 (1)

PARTIAL
5-193 (10)

PARTICLES
4-145 (3, 9)

PARTS
9-297 (6)
6-

PASS
6-123 (6)

PAYBACK
3-181 (10)

PENNEX PROCESS
9-213 (9)

PENTANE
6-191 (9)
8-168 (1)
9-213 (1)
9-254 (1, 2)
12-88 (1, 2)

PENTENE
6-191 (9)

PERCHLOROETHYLENE
6-153 (9)

PERCOLATION FILTRATION PROCESS
9-265 (9)

PERFORMANCE
1-104 (7)
1-119 (7)
2-105 (7)
2-171 (7)
4-180 (7)
4-194 (7)
4-203 (7)
5-201 (8)
6-181 (7)
11-211 (7)
11-229 (6)
11-233 (6)

PERSONNEL
2-171 (9)
3-189 (6)
4-211 (6)
4-216 (9)
5-187 (10)
5-235 (7)
7-147 (9)
8-102 (9)
8-108 (9)
8-115 (9)
8-120 (9)
8-164 (9)
9-317 (6)
9-325 (6)
10-199 (9)
12-158 (9)
12-141 (9)
12-152 (7)

PETRECO BENDER PROCESS
9-266 (9)

PETRECO LOCAP GASOLINE SWEETENER PROCESS
9-267 (9)

PHASES
10-135 (6)
11-211 (6)

PHENOL EXTRACTION PROCESS
9-227 (10)

PHENOLIC PLASTICS
7-83 (9)

PHENOLS
1-143 (9)
5-205 (9)
7-133 (5)
9-224 (10)
9-227 (10)
9-268 (10)

PHOSGENATION
11-177 (10)

PHOSGENE
11-177 (2)

PHOSPHORIC ACID
6-203 (9)
9-205 (10)

PHOTOGRAPHY
5-170 (10)

PHYSICAL PROPERTIES
1-135 (8)
1-139 (8)
2-158 (8)
2-161 (8)
3-129 (6, 7)
3-137 (8)
3-141 (8)
3-157 (7)
3-161 (7)
4-161 (8)
4-165 (8)
4-194 (6)
5-145 (7)
5-149 (6, 7)
5-153 (7)
5-159 (7)
5-170 (6)
5-201 (7)
5-222 (7)
6-123 (6)
6-153 (7)
6-167 (7
6-200 (7)
7-103 (7)
7-111 (7)
7-137 (7)
8-165 (6, 7)
8-167 (7)
9-291 (7)
9-177 (7)
9-185 (7)
9-195 (7)
9-205 (7)
9-213 (7)
9-222 (7)
9-223 (7)
9-224 (7)
9-227 (7)
9-228 (7)
9-229 (7)
9-231 (7)
9-232 (7)
9-234 (7)
9-236 (7)
9-237 (7)
9-240 (7)
9-256 (7)
9-265 (7)
9-276 (7)
10-114 (6)
10-127 (6)
10-135 (7)
10-161 (7)
10-171 (7)
11-145 (8)
11-155 (7)
11-180 (8)
11-205 (7)
12-107 (6)
12-113 (7)
12-144 (7)

PIERS
7-109 (7)

PILES
12-109 (9)

PIPES
1-126 (9)

PIPING
1-107 (9)
5-170 (9)
5-181 (9)
9-285 (9)
10-114 (9)
10-119 (4)
10-127 (4)
10-135 (4)
11-218 (9)
12-137 (9)

PITTING
1-131 (7)

PLANNING
1-115 (8)
1-119 (7)
1-123 (8)
1-157 (4)
1-167 (8)
7-145 (8)
10-199 (10)

PLANTS
4-137 (9)
4-180 (6, 9)
4-199 (9)
6-171 (9)
8-145 (9)

PLASTICS
1-126 (10)
1-128 (10)
7- 83 (9)
11-155 (2)

PLATE-FINS
11-211 (9)

PLATFORMING PROCESS
9-195 (9)

PLATINUM
9-213 (10)
11-183 (10)

PLUGGING
5-170 (6)

PNEUMATIC
2-105 (0)

POLITICS
2-175 (7)

POLYALDEHYDES
7-83 (9)
11-155 (1)

POLYSTERS
1-126 (10)
1-128 (10)
7-83 (9)

POLYETHYLENE
10-143 (9)

POLYHYDRIC ALCOHOLS
9-236 (10)

POLYISOCYANATES
7-83 (9)

POLYMERIZATION
6-203 (4)
9-205 (8, 9, 10)
11-155 (10)

POLYMERS
1-126 (10)
1-128 (10)
5-215 (4)
6-167 (9)
7-83 (9)
9-205 (2)
11-145 (4)
11-155 (2)

POLYMIDES
7-83 (9)

POLYOLS
6-203 (4)

POLYPHENYLENE OXIDE
11-180 (2)

POLYPROPYLENE
7-83 (9)

POLYSTYRENE
7-83 (9)

POLYTHIONIC ACID
10-135 (6)

POLYURETHANES
7-83 (9)

POLYVINYL ACETATE
7-83 (9)

POLYVINYL CHLORIDE
7-83 (9)
9-281 (9)

POTASSIUM CARBONATE
3-145 (7)
7-125 (10)

POTASSIUM HYDROXIDE
9-268 (10)

POURING
1-128 (10)

POUR POINT
4-183 (7)

POWER
4-131 (9)
5-235 (7)
6-131 (7)
7-119 (7)

PRECIOUS METALS
9-195 (10)
9-213 (10)

PREPARATION
4-203 (6, 8, 10)

PRESSURE
1-128 (10)
1-134 (6)
1-135 (6)
1-139 (6)
2-129 (6)
2-158 (6)
2-161 (6)
3-137 (6)
3-141 (6)
3-157 (6)
3-161 (6)
3-156 (6)
4-161 (6)
4-165 (6)
4-168 (6)
4-173 (6)
4-194 (6)
5-165 (6)
5-175 (7)
5-193 (6)
5-222 (6)
6-123 (6)
6-153 (6)
6-161 (6)
6-189 (6)
6-191 (6)
7-109 (6)
7-111 (6)
8-151 (6)
9-240 (6)
9-271 (10)
9-277 (6)
9-285 (7)
10-114 (6)
10-158 (6)
10-171 (6)
11-146 (6)
11-155 (6)
11-180 (6)
11-183 (6)
11-189 (6)
11-205 (6)
11-218 (6)
12-113 (6)

PRESSURE DROP
6-116 (6)
6-123 (7)
6-131 (6)
6-137 (6)
6-141 (6)
8-165 (6, 7)
10-119 (6)
11-211 (6)
12-137 (7)

PRESSURE VESSELS
3-157 (9)

PREVENTION
5-187 (10)

PRICING
1-143 (6)
2-137 (6)
3-135 (8)
3-149 (6)
4-149 (6)
5-205 (6)
6-141 (7)
8-125 (6)
9-281 (6)
10-143 (6)
12-123 (7)

PROBES
5-170 (10)
9-285 (9)

PROCEDURES
10-183 (10)

PROCESSES
1-167 (9)
7-125 (9)
8-137 (9)

PROCESSING
2-125 (4)
2-175 (6)
3-129 (8, 9, 10)
4-203 (4, 6, 7, 8, 10)
5-145 (8, 9, 10)
5-149 (8, 9, 10)
5-153 (8, 9, 10)
5-159 (8, 9, 10)
5-238 (6)
6-210 (6)
7-103 (8, 9, 10)
7-119 (6, 9)
8-168 (8, 9, 10)
9-177 (8, 9, 10)
9-185 (8, 9, 10)
9-195 (8, 9, 10)
9-205 (8, 9, 10)
9-213 (8, 9, 10)
9-222 (8,9, 10)
9-223 (8, 9, 10)
9-224 (8, 9, 10)
9-225 (8, 9, 10)
9-226 (8, 9, 10)
9-228 (8, 9, 10)
9-229 (8, 9, 10)
9-230 (8, 10)
9-231 (8, 9, 10)
9-232 (8, 9, 10)
9-233 (8, 9, 10)
9-234 (8, 9, 10)
9-235 (8, 10)
9-236 (8, 9, 10)
9-237 (8, 9, 10)
9-238 (8, 10)
9-239 (8, 9, 10)
9-240 (8, 9, 10)
9-254 (8, 10)
9-255 (8, 10)
9-256 (8, 9, 10)
9-257 (8, 9, 10)
9-258 (8, 9, 10)
9-259 (8, 9, 10)
9-260 (8, 9, 10)
9-261 (8, 9, 10)
9-262 (8, 10)
9-263 (8, 9, 10)
9-264 (8, 9, 10)
9-265 (8, 9, 10)
9-266 (8, 9, 10)
9-267 (8, 9, 10)
9-268 (8, 10)
9-270 (8, 10)
9271 (8, 10)
9-272 (8, 10)
9-273 (8, 10)
9-274 (8, 9, 10)
9-275 (8, 10)
9-276 (8, 9, 10)
11-225 (6, 8, 9, 10)

PRODUCTION
1-161 (9)
3-135 (8)
5-193 (8)
6-181 (4, 8)
6-195 (6)
7- 83 (8)
5-325 (6)
11-171 (6)
11-183 (8)

PRODUCTIVITY
1-104 (7)

PROFESSIONALISM
3-189 (6)
11-235 (6)

PROFITS
9-325 (6)
12-123 (7)
12-127 (7)
12-132 (7)

PROGRAMING
1-104 (10)
12-132 (10)

PROGRAMS
4-194 (10)

PROJECTING/TIME/
1-157 (4)
2-167 (10)
12-132 (6)

PROJECTS
1-167 (9)
6-149 (4)
7-145 (9)

PROMOTING
3-189 (6)
5-184 (8)

PROPADIENE
12-113 (9)

PROPANE
1-134 (9)
5-222 (9)
6-144 (2)
6-191 (9)
6-195 (1, 9)
9-228 (10)
9-229 (10)
9-230 (10)
9-254 (1, 2)
9-258 (1, 2)
9-274 (1)
9-275 (2)
10-189 (2)
11-205 (9)
12-88 (1, 2)
12-113 (9)

PROPANE DEASPHALTING AND FRACTIONATING PROCESS
9-228 (9)

PROPANE DEWAXING PROCESS
9-229 (9)

PROPANE EXTRACTION PROCESS
9-230 (9)

PROPANOL
10-171 (9)

PROPERTIES/ CHARACTERISTCS/
1-134 (7)
1-135 (8)
1-139 (8)
1-142 (7)
2-157 (7)
2-158 (8)
2-161 (8)
3-129 (7)
3-137 (8)
3-141 (8)
3-157 (7)
3-161 (7)
3-156 (7)
4-161 (8)
4-165 (8)
4-168 (7)
4-194 (6)
5-145 (7)
5-149 (6, 7)
5-153 (7)
5-159 (7)
5-170 (6)
5-201 (7)
5-222 (7)
6-123 (6)
6-153 (7)
6-161 (7)
6-167 (7)
6-191 (6, 7)
6-200 (6, 7)
7-103 (7)
7-111 (7)
7-137 (7)
8-165 (6, 7)
8-167 (7)
8-168 (7)
9-291 (7)
9-177 (7)
9-185 (7)
9-195 (7)
9-205 (7)
9-213 (7)
9-222 (7)
9-223 (7)
9-224 (7)
9-227 (7)
9-228 (7)
9-229 (7)
9-231 (7)
9-232 (7)
9-233 (7)
9-236 (7)
9-237 (7)
9-240 (7)
9-256 (7)
9-265 (7)
9-276 (7)
10-114 (6)
10-127 (6)
10-135 (7)
10-171 (7)
11-145 (8)
11-155 (7)
11-180 (8)
11-205 (7)
12-107 (6)
12-113 (7)

PROPIONIC ACID
9-268 (10)

PROPORTIONING
8-151 (6)

PROPOSALS
1-115 (10)
6-141 (7)

PROPYLENE
1-134 (9)
3-156 (9)
5-222 (9)
9-205 (1)
9-275 (2)
1-126 (8)

PULSATIONS
10-119 (6)

PUMPING
4-183 (7, 10)
4-207 (10)

PUMPS
1-107A (9)
1-128 (9)
1-131 (9)
4-131 (4)
4-137 (10)
6-171 (10)
10-119 (4)

PURGING
9-291 (6)

PURIFICATION
4-131 (8)
12- 97 (8, 10)

PYRIDINE
7-133 (5)

PYROLYSIS
4-187 (10)
9-185 (8, 9, 10)
9-273 (8, 10)

QUAILFICATIONS
1-104 (6)

QUALITY
10-127 (6)

QUANTITY
7-133 (6)
8-165 (6, 7)
10-193 (6, 7)

QUENCHING
12-144 (6)

RADIOGRAPHY
5-170 (10)

RAFFINATE
7-133 (2)

RATES
3-181 (10)
6-171 (6)
7-125 (6)
9-285 (7)
10-189 (6)
12-88 (6, 7)

RATING
4-183 (4, 8)
7-148 (8)
8-102 (10)
8-115 (10)
8-120 (10)

RATIOS
8-151 (6)
12-132 (6)

RAW MATERIALS
11-171 (6)

REACTIONS
1-107 (4, 9)
2-148 (10)
3-129 (8, 9, 10)
3-157 (4)
4-203 (4, 9, 10)
5-149 (8, 9, 10)
5-153 (8, 9, 10)
5-159 (8, 9, 10)
5-181 (4, 6)
5-201 (4)
5-218 (10)
6-203 (10)
7- 83 (10)
7-103 (8, 9, 10)
8-168 (8, 9, 10)
9-203 (10)
9-177 (8, 9, 10)
9-185 (8, 9, 10)
9-195 (8, 9, 10)
9-205 (8, 9, 10)
9-213 (8, 9, 10)
9-240 (8, 9, 10)
9-257 (8, 9, 10)
9-258 (8, 9, 10)
9-259 (8, 9, 10)
9-261 (8, 9, 10)
9-262 (8, 10)
9-263 (8, 9)
9-264 (8, 9, 10)
9-266 (8, 9, 10)
9-267 (8, 9, 10)
9-268 (8, 9, 10)
9-270 (8, 10)
9-272 (8, 10)
9-273 (8, 10)
9-274 (8, 9, 10)
10-135 (6)
10-183 (4)
11-155 (10)
11-183 (10)
11-195 (10)
11-225 (6, 8, 9, 0)

REACTORS
3-157 (9)
10-119 (4)
12-144 (4)

REBOILERS
1-107 (9)
4-137 (10)
6-116 (9)
6-171 (10)
9-285 (9)
10-119 (4)

RECORDERS
8-151 (10)
9-297 (9)

RECORDS
1-123 (10)
1-161 (10)
2-167 (10)
4-159 (9)
4-183 (10)
5-175 (10)
7-119 (10)
11-233 (7)

RECOVERING
4-131 (8)
6-144 (8)
9-232 (8, 9, 10)
10-165 (4)
12-107 (4)

RECYCLE
5-140 (6)

REDUCTION
11-177 (10)

REFLUX
3-173 (7)
5-198 (7)

REFORMING
5-181 (4)
9-195 (8, 9, 10)
9-274 (8, 9, 10)

REFRACTORIES
3-157 (10)

REFRIGERATION
4-131 (4)
8-137 (10)
8-145 (10)
9-238 (8, 10)
9-239 (8, 9, 10)
11-211 (7)

REGENERATION
10-189 (10)

REGENERATORS
4-137A (10)

REGRESSION
1-157 (10)

REGULATION
5-175 (10)

REHIRING
9-325 (7)

REINFORCEMENT
7-109 (7)
12-109 (9)

REINFORCING
1-126 (10)

RELATIONSHIPS
1-157 (10)
2-153 (10)
3-173 (10)
5-198 (10)
5-227 (10)
8-165 (10)
10-165 (10)
10-193 (9)
12-88 (10)
12-107 (10)
12-132 (10)
12-135 (10)

RELAYS
9-297 (9)

RELIEF VALVES
5-175 (9)

REMOVAL
4-145 (8)
4-203 (4)
7-125 (9)
9-255 (8, 10)
9-256 (10)
9-257 (10)
9-258 (10)
9-260 (10)
9-261 (8, 9, 10)
9-262 (8, 10)
9-268 (10)

REPAIRING
1-115 (7)
1-126 (8)
5-170 (7)

REPORTING
2-167 (8)

REPORTS
1-123 (10)
4-159 (9)
6-207 (9)

REQUIREMENTS
6-195 (8)

REQUISITION
1-172 (10)

RESEARCH
5-227 (8)
7-145 (8)
8-173 (8)
9-311 (8)
10-207 (10)

RESIDUES
3-129 (1)
5-153 (1)
5-159 (1)
7-1-3 (1)
9-177 (1)
9-185 (1)
9-232 (1, 2)

RESPONSE
2-105 (7)

RETRAINING
9-325 (7)

RETRIEVAL
4-159 (4)
5-227 (10)
5-227 (10)

RETURN
3-181 (10)

RETURN ON INVESTMENT
4-169 (4)
5-140 (7)
12-123 (7)
12-132 (7)

REVIEWING
5-187 (10)

REYNOLDS NUMBER
2-143 (7)

RHODIUM
11-183 (10)

ROLE PLAYING
8-111 (10)

ROTORS
3-126 (9)

SAFETY
1-107 (6)
5-175 (4)
5-227 (9)
8-145 (8)
12-141 (9)

SALARY
3-189 (6)

SALES
3-135 (8)
5-219 (9)
12-123 (7)

SALTS
9-255 (3)
9-260 (3)

SAMPLING
5-187 (10)

SAN ANTONIO
6-144 (9)

SAPONIFICATION
9-272 (8, 10)

SATURATION
6-189 (7)

SAVINGS
4-169 (7)

SCHEDULES
1-115 (7)

SCHEDULING
1-119 (7)
1-123 (8)
6-186 (7)

SCHOOL
12-141 (10)

Scrubbers
4-137A (10)
4-145 (10)
6-171 (10)
9-285 (10)

Seals
1-131 (9)
10-158 (9)

Seamless
10-127 (6)

Searching
4-159 (4)

Seawater
1-126 (5)

Sediments
8-141 (10)

Segments
12-135 (9)

Selection
1-115 (8)
5-184 (8)
7-125 (8)
10-127 (7)
10-135 (8)
10-140 (8)

Selective Hydrogenation Process
9-240 (9)

Self-Adjusting
2-105 (0)

Self Development
3-189 (7)

Sensing
8-151 (10)

Separation
2-153 (9)
3-173 (9)
4-131 (8)
5-198 (9)
6-167 (6, 8)
7-133 (8, 9)
8-141 (4)
8-155 (7, 9)
9-222 (8, 9, 10)
9-223 (8, 9, 10)
9-224 (8, 9, 10)
9-225 (8, 9, 10)
9-226 (8, 9, 10)
9-227 (8, 9, 10)
9-228 (8, 9, 10)
9-229 (8, 9, 10)
9-230 (8, 9, 10)
9-231 (8, 9, 10)
9-232 (8, 9, 10)
9-233 (8, 9, 10)
9-235 (8, 10)
9-236 (8, 9, 10)
9-237 (8, 9, 10)
9-239 (8, 9, 10)
9-271 (8, 10)
9-275 (8, 10)
9-276 (8, 9, 10)
10-193 (9)
12-88 (8, 9)
12-97 (8, 10)
12-103 (8, 9, 10)
12-107 (8, 9)
12-135 (4)

Separators
2-125 (10)
4-145 (10)
6-116 (9)
12-97 (10)

Service
10-127 (6)

Setting
2-105 (6)

Shafts
1-131 (9)

Shapes
7-109 (6)
12-137 (6)

Shifts
1-115 (6)

Shocks
9-291 (6)

Shutdowns
1-115 (9)
5-170 (7)

Sidestreams
5-198 (6)

Sieves
3-170 (10)
8-145 (10)
9-254 (5)
9-276 (10)

Sigma Phase
10-135 (6)

Signals
4-131 (10)
9-297 (9)

Silica Gel
3-170 (10)
11-146 (10)

Silicones
6-167 (9)

Size
4-199 (6)
5-140 (6)
5-149 (6)
5-198 (7)
10-189 (6)
11-218 (7)

Sizing
5-198 (4, 8)
6-131 (8)
6-137 (8)
7-133 (4)
8-155 (4)
8-165 (4)
10-119 (6, 8)
12-107 (7, 8)

Skills
1-104 (6)
8-164 (6)

Slide Rules
10-119 (10)

Smoke
9-303 (7)

SO_2 Extraction Process
9-231 (9)

Societies
5-227 (10)

Sodium Hydroxide
11-225 (1)

Sodium Sulfide
9-267 (1)

Soils
12-109 (6)

Solid Phosphoric Acid Concentration Process
9-205 (9)

Solids
4-145 (3, 9)
9-260 (3)

Solutions/Mixtures/
12-103 (1)

Solutizer Process
9-268 (9)

Solvent Decarbonizing Process
9-232 (9)

Solvent Dewaxing Process
9-233 (9)

Solvents
7-133 (1, 6)
9-222 (10)
9-223 (10)
9-224 (10)
9-225 (10)
9-227 (10)
9-228 (10)
9-229 (10)
9-230 (10)
9-231 (10)
9-232 (10)
9-233 (10)
9-234 (10)
9-235 (10)
9-236 (10)
9-237 (10)
9-238 (10)
9-239 (10)
9-257 (1, 2)

Sound
5-170 (10)

Spacing
4-207 (10)
6-123 (6)

Speaking
10-203 (10)
12-158 (4)

Specifications
6-141 (6)
6-186 (7)
10-114 (10)
10-127 (8)

Specific Gravity
10-114 (6)

Specific Heat
7-137 (7)

Specifying
4-183 (4)
4-194 (8)
10-135 (8)

Spoilers
2-143 (6)

Spray Deoiling Process
9-234 (9)

Spraying
9-234 (8, 9, 10)

Spying
12-152 (6)

Stability
6-167 (7)

Stabilizers
10-135 (6)
11-155 (1)

Stacks
2-143 (9)
5-170 (9)
11-211 (6)

Stages
5-198 (7)
6-181 (6)

Stainless Steel
5-181 (9)
9-285 (10)

Stainless Steel, Type 303
5-181 (9)

Stainless Steel, Type 304
5-181 (9)

Stainless Steel, Type 309
5-181 (9)

Stainless Steel, Type 316
5-181 (9)

Stainless Steel, Type 321
5-181 (9)

Stainless Steel, Type 347
5-181 (9)

Standards
1-119 (10)
1-123 (10)
1-153 (10)
3-126 (10)
6-186 (6)
10-127 (10)

Starting
10-199 (4)

Static
4-207 (10)

Steam
4-203 (1)
6-116 (9)
7-125 (6)
9-273 (1)
9-274 (1)
11-189 (1)
11-218 (4)
12-137 (4)

Steels
5-181 (9)
5-201 (9)
10-127 (9)
10-135 (9)
12-144 (9)

Steel, 2¼ Cr-1 Mo
12-144 (9)

Steel, ASTM A 387-D
12-144 (9)

Steel, ASTM A 542-9
12-144 (9)

Stilbene
12- 97 (1, 2)

Stills
6-171 (10)

Storage
4-207 (9)
8-145 (4)

Strain
10-158 (7)

Strainers
11-218 (9)

Streams/Process/
11-211 (4)

Strength
5-201 (7)
12-144 (7)

Stress Corrosion Cracking
5-181 (10)
10-135 (7)

Stresses
1-131 (6)
3-157 (7)
7-109 (7)
10-158 (6)
12-109 (6)

Stress Rupture
12-144 (7)

Strippers
4-137 (10)
6-171 (10)
9-285 (9)

Stripping
2-153 (9)
7-125 (6)
11-151 (10)

Strouhal Number
2-143 (7)

Structures
12-109 (4)

Stuffing Boxes
1-131 (9)

Style
6-207 (10)

Styrene
5-205 (9)

Styrene Plastics
7- 83 (9)

Subordinates
5-235 (7)

Sulfides/Inorganic/
3-157 (5)
4-131B (3)
4-203 (1)
5-181 (3)
6-181 (1)
7-125 (3)
9-254 (10)
9-261 (10)
9-262 (3)
10-135 (6)

Sulfinol
7-125 (10)

Sulfolane
9-235 (10)

Sulfolane Extraction Process
9-235 (9)

Sulfur
6-181 (2)
9-231 (3)
9-266 (1)
11-221 (6)

Sulfur Dioxide
4-161 (9)
7-133 (5)
9-231 (10)

Sulfuric Acid
11-177 (1)

Sulfur Oxychloride
11-225 (1)

Superheaters
6-116B (9)

Superheating
5-116B (6)

Supervision
1-104 (9)
3-189 (7)
4-211 (4)
8-201 (4)
8-108 (4)
8-115 (4)
8-120 (4)
8-164 (9)
9-317 (7)
10-199 (4)
10-203 (4)

Supervisors
5-184 (9)
5-235 (6)
8-102 (9)
8-108 (9)
8-111 (9)
8-115 (9)
8-120 (9)

Supplies
3-135 (8)
4-134 (8)
6-195 (8)

Supports
12-109 (9)

Surface Tension
1-142 (7)
2-157 (7)
3-161 (7)
6-153 (7)
7-111 (7)
10-161 (7)
10-171 (7)

Surveys
7-119 (10)

Swedish
10-127 (0)

Symbols
9-297 (10)
10-114 (10)

Synthesis
11-155 (8)
11-171 (8)
11-174 (8)
11-177 (8)
11-189 (8)
11-195 (8)

Synthesis Gas
5-193 (2)

Synthesizing
2-129 (8)
2-148 (8)
4-187 (8)
5-140 (8)
5-218 (8)
9-277 (8)
9-320 (8)

Systems
1-153 (9)

Tables/Tabular/
1-153 (10)
8-167 (10)

Tanks
4-207 (9)
6-171 (10)
8-145 (10)
9-285 (10)

Teaching
10-199 (10)

Technicians
10-199 (9)

Technology
3-189 (7)
6-207 (9)

Telogens
9-277 (1)

Telomerization
9-277 (10)

Telomers
9-277 (2)

Temperature
1-134 (6)
1-135 (6)
1-139 (6)
1-142 (6)
2-129 (6)
2-157 (6)
2-158 (6)
2-161 (6)
3-137 (6)
3-141 (6)
3-145 (7)
3-156 (6)
3-157 (6)
3-161 (6)
4-161 (6)
4-165 (6)
4-168 (6)
4-173 (6)
4-183 (6)
4-187 (6)
4-194 (6)
4-203 (7)
5-165 (6)
5-170 (6)
5-222 (6)
6-116 (6)
6-131 (6)
6-137 (6)
6-153 (6)
6-161 (6)
6-171 (6)
6-181 (6)
6-189 (6)
6-191 (6)
6-200 (6)
7-111 (6)
7-133 (6)
7-137 (6)
8-137 (6)
8-141 (6)
8-151 (6)
8-167 (6)
9-277 (6)
9-285 (6, 7)
9-291 (7)
10-114 (6)
10-135 (6)
10-158 (6)
10-161 (6)
10-171 (6)
11-146 (6)
11-155 (6)
11-180 (6)
11-183 (6)
11-205 (6)
11-211 (7)
11-218 (6)
12-113 (6)

Tempering
12-144 (6)

Thiocon Process
11-225 (9)

Tensile Strength
11-180 (7)
12-144 (7)

Tension
11-229 (6)
12-109 (7)

Ternary
12-103 (0)

Terpolymers
5-215 (9)

Testing
3-126 (8)
5-175 (10)
5-184 (10)
8-164 (6)
10-199 (10)

Tests
1-104 (10)
7-147 (10)
12-144 (10)

Tetraoxane
11-145 (2)

Texas
11-225 (9)

Texas City
11-225 (9)

Texas City Refining, Inc
11-225 (9)

Texas Eastern
8-145 (0)

Thermal Cracking Process
9-185 (9)

Thermocouples
5-170 (10)
8-151 (10)

Thermodynamics
1-135 (8)
1-139 (8)
2-158 (8)
2-161 (8)
3-137 (8)
3-141 (8)
4-165 (8)
4-194 (6)

Thermoplastic
7-83 (9)
11-155 (2)
11-180 (2)

Thermosetting
1-128 (10)

Thermowells
1-107 (9)
5-181 (9)

Thickness
5-170 (6)
10-114 (6)

THRUSTS
12-109 (7)

TIME
1-119 (9)
1-157 (6)
5-153 (6)
6-217 (9)
9-257 (6)
10-189 (6)
11-233 (7)
12-88 (7)

TIME STUDY
5-187 (10)

TOLERANCES
10-127 (6)

TOLUENE
2-137 (9)
5-140 (1)
5-205 (9)
8-167 (9)
11-177 (1)

TOLUENE DIISOCYANATE
11-177 (2)

TOPPING
8-141 (4)

TOUGHNESS
10-135 (7)
12-144 (7)

TOWERS
1-107 (9)
2-143 (9)

TOYO TOATSU
11-145 (0)

TRACING
11-218 (4)

TRAINING
3-216 (8)
8-111 (8)
12-141 (8)
12-158 (8)

TRANSFERRING
6-116B (6)
6-123 (7)
6-137 (6)
6-141 (6)

TRANS-2-BUTENE
6-191 (9)

TRANSMITTERS
8-151 (10)
9-297 (9)

TRAPS
1-107 (9)
11-218 (9)

TRAYS
1-107 (9)

TREATMENT
2-125 (10)
4-131 (8)
4-203 (4, 6, 7, 8, 10)
5-149 (8, 9, 10)
6-167 (6, 8)
7-125 (9)
7-130 (4)
9-222 (8, 9, 10)
9-223 (8, 9, 10)
9-224 (8, 9, 10)
9-225 (8, 9, 10)
9-226 (8, 9, 10)
9-227 (8, 9, 10)
9-228 (8, 9, 10)
9-229 (8, 9, 10)
9-230 (8, 10)
9-231 (8, 9, 10)
9-232 (8, 9, 10)
9-233 (8, 9, 10)
9-235 (8, 10)
9-236 (8, 9, 10)
9-237 (8, 9, 10)
9-239 (8, 9, 10)
9-240 (8, 9, 10)
9-254 (8, 10)
9-255 (8, 10)
9-256 (6, 8, 9, 10)
9-257 (8, 9, 10)
9-258 (8, 9, 10)
9-259 (8, 9, 10)
9-260 (8, 9, 10)
9-261 (8, 9, 10)
9-262 (8, 10)
9-263 (8, 10)
9-264 (6, 8, 9, 10)
9-265 (8, 9, 10)
9-266 (8, 9, 10)
9-267 (8, 9, 10)
9-268 (8, 10)
9-285 (4)
11-225 (6, 8, 9, 10)

TRICHLOROETHYLENE
6-153 (9)

TRIETHANOLAMINE
9-261 (10)

TRIETHYLENE GLYCOL
4-131 (10)
6-171 (10)
6-162 (10)

2, 2, 4-TRIMETHYL-PENTANE-1
12-103 (1, 2)

TRIOXANE
11-155 (1)

2, 4, 4-TRIMETHYL-PENTANE-1
12-103 (1, 2)

TUBES
6-137 (9)
9-291 (9)

TUBESHEET
10-158 (9)

TUNGSTEN
11-195 (10)

TUNING
2-105 (4, 6)

TURBINES
4-131A (10)
6-144 (10)
8-137 (10)

TURBULENCE
6-123 (6)

TURNAROUND
1-115B (9)

UDEX PROCESS
9-236 (9)

ULTRAFINING PROCESS
9-240 (9)

ULTRAFORMING PROCESS
9-195 (9)

UNICRACKING-JHC PROCESS
9-177 (9)

UNIFINING PROCESS
9-240 (9)

UNIONS
9-317 (6)

UNITED STATES
7-119 (9)

UPGRADING
1-104 (8)

UREA
2-129 (2)
5-218 (1)
9-302 (1)
11-146 (1)

UREA DEWAXING PROCESS
9-237 (9)

USES
3-135 (8)
6-203 (8)
9-281 (7)
10-165 (8)

UTILITIES
2-125 (9)
3-129 (7)
5-149 (7)
6-144 (7)
7-103 (7)
7-119 (7)
8-168 (7)
9-177 (7)
9-185 (7)
9-195 (7)
9-205 (7)
9-213 (7)
9-224 (7)
9-225 (7)
9-226 (7)
9-228 (7)
9-231 (7)
9-232 (7)
9-233 (7)
9-237 (7)
9-239 (7)
9-240 (7)
9-258 (7)
9-259 (7)
9-260 (7)
9-261 (7)
9-264 (7)
9-266 (7)
9-267 (7)
9-274 (7)
12-137 (4)

VACUUM
6-116 (6)
9-271 (10)

VALUES
4-169 (9)

VALVES
1-107 (9)
5-170 (9)
5-175 (9)
8-151 (10)
9-285 (9)
10-114 (6)
10-119 (9)

VANADIUM
9-240 (3)

VAPOR
4-207 (10)
5-222 (9)
6-161 (9)
6-189 (9)

VAPORIZATION
3-161 (7)
3-153 (7)
6-191 (7)
7-111 (7)
8-145 (4)
10-171 (7)

VAPORIZERS
6-116 (9)

VAPOR PHASE
1-134 (9)
1-135 (5)
1-139 (5)
2-158 (5)
2-161 (5)
3-137 (5)
3-141 (5)
3-156 (5)
3-161 (5)
4-161 (5)
4-165 (5)
6-153 (5)
7-111 (5)
9-302 (5)
10-171 (5)
11-146 (5)
11-189 (5)
11-205 (5)
12-113 (5)

VAPOR PRESSURE
1-135 (7)
1-139 (7)
2-158 (7)
2-161 (7)
3-137 (7)
3-141 (7)
3-145 (6)
3-161 (7)
4-161 (7)
4-165 (7)
6-153 (7)
7-111 (7)
10-171 (7)

VAPORS
8-137 (1)
8-145 (1)
11-211 (6)

VARIABLES
2-153 (6, 7)
8-151 (6)

VELOCITY
6-123 (6)
6-131 (6)
6-141 (6)
8-165 (6, 7)

VENDORS
6-141 (6)

VENTURE ANALYSIS
5-219 (10)
12-127 (4)

VENTURES
2-175 (7)

VERIFYING
6-185 (10)

VESSELS
1-107 (9)
3-157 (9)
5-170 (9)
5-181 (9)
7-109 (4)
8-165 (9)

VIBRATIONS
2-143 (7)
3-126 (7)
10-119 (6)

VINYL ACETATE
8-125 (9)
11-171 (2)

VINYL CHLORIDE
6-153 (9)
8-125 (9)
10-143 (9)

VINYL COMPOUNDS
6-153 (9)
6-195 (2)
7-83 (9)
8-125 (9)
10-143 (9)
11-155 (1)
11-171 (2)

VINYL PLASTICS
7-83 (9)

VISBREAKING PROCESS
9-185 (9)

VISCOSITY
3-161 (7)
5-149 (7)
6-153 (7)
7-111 (7)
8-165 (6, 7)
10-171 (7)

VISUAL AIDS
12-158 (10)

VOREX SHEDDING
2-143 (6)

WASHING
9-255 (8, 10)
9-258 (8, 9, 10)
9-260 (8, 9, 10)
11-197 (7)

WASTES
7-130 (9)
10-165 (1)

WATER
1-107 (6)
1-126 (5)
3-145 (6)
3-157 (5)
4-131 (3)
4-165 (9)
6-171 (3)
7-130 (9)
8-141 (10)
8-145 (3)
9-254 (3)
9-260 (10)
9-262 (3, 10)
9-273 (1)
9-274 (1)
12-107 (1)
12-137 (4)

WATER REMOVAL
9-254 (8, 10)

WAXES
9-222 (3)
9-229 (3)
9-233 (2)
9-234 (1, 2)
9-238 (1, 2)
9-239 (1, 2)

WAX FRACTIONIZATION PROCESS
9-238 (9)

WAX MANUFACTURING, MIBK PROCESS
9-239 (9)

WEAR
1-131 (7)
1-167 (1)

WELDING
10-127 (6)
10-135 (6)

WELDS
10-158 (9)

WIND/AIR MOVEMENT/
2-143 (6)

WINDOWS
6-123 (9)

WORK
5-187 (10)
6-217 (9)
11-233 (6)

WORK SAMPLING
5-187 (10)

WRITING
6-207 (8)
10-203 (10)

XYLENE
4-149 (9)
5-205 (9)
11-174 (1)
12-97 (1, 2)
12-103 (1, 2)

XYLENEDIAMINE
11-174 (2)

YIELD
2-129 (7)
3-129 (7)
4-187 (7)
5-140 (7)
5-145 (7)
5-149 (7)
5-153 (7)
5-159 (7)
5-165 (7)
7-103 (7)
7-133 (7)
8-168 (7)
9-177 (7)
9-185 (7)
9-195 (7)
9-205 (7)
9-213 (7)
9-222 (7)
9-224 (7)
9-228 (7)
9-229 (7)
9-231 (7)
9-236 (7)
9-240 (7)
9-265 (7)
11-146 (7)
11-183 (7)

YIELD STRENGTH
12-144 (7)

ZEOLITES
5-145 (6)
8-145 (10)
9-254 (5)
9-276 (10)
10-183 (9)

ZONES
12-97 (10)

Special Reports Covered in Recent Years

1963

Maintenance	Jan.	93
Distillation Instrumentation	Feb.	107
Polynuclear Aromatics	March	109
Natural Gas Processing	April	115
API Reports	May	121
Tall Towers	June	109
World Petroleum Congress	July	114
Employment Practices	Aug.	91
Refining Developments	Sept.	117
Fired Heaters	Oct.	115
Petrochemical Handbook	Nov.	129
Separation Design	Dec.	89

1964

Maintenance	Jan.	91
Computer Unraveled	Feb.	84
Biodegradable Detergents	March	91
Natural Gas Processing	April	109
API Reports	May	113
Low Temperature	June	115
EEC Moves Ahead	July	97
Communications, Human Side	Aug.	97
Refining Process Handbook	Sept.	139
Ideas from Space Research	Oct.	117
Petrochemical Developments	Nov.	139
Simulation of Dynamics	Dec.	75

1965

Maintenance	Jan.	78
Sensitivity Analysis	Feb.	111
Post-Installation Appraisals	March	109
Natural Gas Processing	April	119
API Reports	May	159
Process Pumps	June	121
Guarantees and Contracts	July	104
Engineers Keep Up-to-Date	Aug.	98
Refining Developments	Sept.	151
Centrifugal Compressors	Oct.	115
Petrochemical Handbook	Nov.	157
Hydrocracking	Dec.	95

1966

Maintenance	Jan.	103
Controllers—Set Them Right	Feb.	105
Non-Tariff Trade Barriers	March	106
Natural Gas Processing	April	131
API Reports	May	139
Heat Exchangers	June	115
Progress in Polymers	July	83
Performance Appraisals	Aug.	102
Refining Process Handbook	Sept.	173
Process Piping	Oct.	113
Petrochemical Developments	Nov.	141
Separation Methods	Dec.	87

AUTHOR INDEX

A

Adams, D. ..... 8—165
Allen, D. L. ..... 9—285
Anderson, Gus A. ..... 1—119
Axelrod, L. C. ..... 10—140

B

Backensto, E. B. ..... 9—291
Baker, W. J. ..... 6—141
Ballard, Don. ..... 4—137
Also 6—171
Barbour, Leon T. ..... 11—221
Barner, H. E. ..... 6—161
Bates, Alan G. ..... 3—181
Berg, Lloyd ..... 12—103
Bergman, Donald J. ..... 10—158
Berry, Virginia ..... 6—191
Best, D. ..... 4—165
Beuther, Harold ..... 5—149
Bhalla, L. M. ..... 3—137
Also 3—141
Also 4—165
Bickley, R. S. ..... 6—203
Billon, A. ..... 3—129
Blake, Michael P. ..... 3—126
Blanks, R. F. ..... 5—215
Bradley, C. G. ..... 12—152
Brewer, M. B. ..... 4—203
Brown, Andrew A. ..... 7—109
Also 12—109
Brown, R. M. ..... 12—144
Burbidge, B. W. ..... 8—168
Burke, D. E. ..... 8—167
Butte, Walter A. ..... 9—277
Byrd, Joe H. ..... 8—164
Byrne, D. J. ..... 5—193

C

Cadman, T. W. ..... 1—139
Cain, T. G. ..... 11—233
Canjar, L. N. ..... 1—135
Also 1—139
Also 2—158
Also 2—161
Also 4—161
Also 4—165
Carter, H. R. ..... 1—123
Castillo, H. ..... 3—141
Chao, K. C. ..... 8—165
Cheadle, G. D. ..... 7—103
Cheavens, T. H. ..... 4—203
Chew, Woodrow W. ..... 6—189
Choffe, B. ..... 5—188
Clark, William G. ..... 1—153
Conison, Joseph ..... 9—297
Cook, Lucien H. ..... 2—129
Couper, A. S. ..... 5—181
Craig, R. G. ..... 5—159
Crawford, H. M. ..... 7—130
Crenshaw, Lee A. ..... 11—225
Curry, S. W. ..... 8—173

D

Dana, P. M. ..... 7—103
De Cristofaro, Ron R. ..... 9—325
DeFarges, J. W. ..... 2—153
DeGhetto, Kenneth ..... 2—143
Demmel, E. J. ..... 5—145
Derrien, M. ..... 3—129
Dingman, J. C. ..... 9—285
Domke, C. J. ..... 9—303
Donnelly, Frank J. ..... 11—221
Doraiswamy, L. K. ..... 6—200
Douglas, F. R. ..... 12—127

E

Edwards, Clyde M. ..... 4—180
Eland, Kenneth G. ..... 11—218
Enneking, J. C. ..... 10—189

F

Fan, Y. N. ..... 11—211
Feigelman, Stanford ..... 5—140
Finneran, J. A. ..... 10—140
Fishtine, Stanley H. ..... 4—173
Fitzgerald, K. J. ..... 7—125
Fook, C. F. Ho ..... 2—161
Forry, Keith ..... 1—107
Frank, S. M. ..... 4—199
Frazier, A. W. ..... 1—167

G

Gallant, Robert W. ..... 3—161
Also 6—153
Also 7—111
Also 10—171
Also 12—113
Garcia-Borras, Thomas ..... 4—159
Goar, B. G. ..... 6—181
Goodfellow, Matthew ..... 9—317
Gowan, Alastair C. ..... 11—180
Goyal, P. ..... 6—200
Graue, D. J. ..... 6—191
Griswold, C. R. ..... 5—153
Grosselfinger, F. B. ..... 6—186
Gulley, Dale L. ..... 6—116

H

Hadden, S. T. ..... 7—137
Also 10—161
Harriz, C. G. ..... 10—183
Haynes, Roger M. ..... 1—115
Heisler, J. ..... 2—158
Hellmer, Lars ..... 11—183
Hellwig, K. C. ..... 5—165
Henke, A. M. ..... 5—159
Henke, G. E. ..... 8—155
Herrin, J. P. ..... 6—144
Himmele, W. ..... 11—141
Hohenschutz, H. ..... 11—141
Horn, E. M. ..... 1—116
Hoyt, W. B. ..... 10—127
Hudgin, Donald E. ..... 11—155
Hudson, William B. ..... 6—149
Hummer, H. B. ..... 1—131
Humphries, C. L. ..... 12— 88
Huneke, J. M. ..... 7—119

J

Johanson, E. S. ..... 5—165
Johnson, C. A. ..... 5—165
Johnson, E. ..... 5—187
Jonas, C. R. ..... 4—161
Judson, R. W. ..... 10—114

K

Kamptner, H. K. ..... 4—187
Kapfer, W. H. ..... 12—127
Kern, Robert ..... 10—119
Kim, J. C. ..... 12—107
King, R. W. ..... 11—189
Klaus, E. E. ..... 6—167
Korin, A. D. ..... 3—157
Krause, W. R. ..... 4—187
Kurata, F. ..... 11—205
Kwolek, S. J. ..... 5—159

L

Lambrix, J. R. ..... 4—199
Lancaster, J. F. ..... 10—127
Lappin, T. A. ..... 7—103
Larkey, Charles S. ..... 12—135
Lavergne, J. C. ..... 3—129
Lee, W. E. ..... 1—139
Lema, L. ..... 3—137
Also 3—141
Lemke, Hans ..... 2—148
Lepak, C. B. ..... 2—171
Lessi, Alessio ..... 3—173
Lewis, Norman J. ..... 6—195
Lindley, D. J. ..... 9—303
Loen, R. O. ..... 10—199
Lohrisch, F. W. ..... 6—131
Also 6—137
Long, William ..... 2—143
Lortz, R. W. ..... 5—175
Lozano, A. ..... 3—137
Also 3—141
Lucas, M. ..... 5—188
Lynch, M. E. ..... 2—171
Also 4—216

Mc

McConomy, H. F. ..... 5—181
McDowell, D. W., Jr. ..... 3—157
McPherson, Joseph H. ..... 8—120

M

MacKellar, D. G. ..... 6—203
Manning, F. S. ..... 1—135
Also 1—139
Also 2—158
Also 2—161
Also 4—161
Also 4—165
Mansfield, R. F. ..... 5—149
Mapstone, George E. ..... 3—145
Marisk, F. V. ..... 12—127
Maristany, B. A. ..... 12—123
Martin, Britt ..... 12—141
Meier, G. G. ..... 8—173
Michals, E. A. ..... 10—203
Miller, W. E. ..... 1—172
Milligan, J. D. ..... 3—157
Miraglia, J. F. ..... 8—111
Mitsushima, Hirotsugu ..... 11—195
Miyake, Y. ..... 11—145
Molstad, M. C. ..... 12—107
Montgomery, C. F. ..... 3—135
Moore, T. F. ..... 9—285
Murakami, Torajiro ..... 11—195
Murrill, Paul W. ..... 2—105
Myers, Elwin ..... 11—225

N

Nauman, E. B. ..... 5—215
Navarre, F. P. ..... 5—188
Nelson, George A. ..... 5—201
Nelson, Richard L. ..... 12—103
Nelson, William G. IV ..... 4—169
Nemec, D. ..... 10—193
Newton, A. J. ..... 12—137
Nonnenmacher, H. ..... 3—129

O

O'Brien, D. E. ..... 1—135
Also 2—158
Also 2—161
O'Connor, C. B. ..... 5—140
Oettinger, W. ..... 3—129
Oga, Taijiro ..... 11—174
Olivier, Georges ..... 9—281
Opekar, P. C. ..... 6—181
Overbeck, C. F. ..... 1—128

P

Park, William R. ..... 2—167
Parrish, C. B. ..... 5—170
Patinkin, S. H. ..... 4—183
Penaranda, J. ..... 3—137
Also 3—141
Perrella, A. V. ..... 5—145
Perry, Dunman, Jr. ..... 4—145
Petrin, Joseph W. ..... 12—103
Pierce, J. E. ..... 3—170
Pike, R. W. ..... 12—152
Pitts, George O. ..... 1—104
Plank, C. A. ..... 8—167
Pollock, E. K. ..... 1—135
Also 1—139
Pollard, Robert R. ..... 11—197
Pontious, R. L. ..... 4—183
Porter, B. F. ..... 9—291
Powell, R. F. ..... 8—111
Powers, John E. ..... 12— 97
Prior, J. E. ..... 9—291

Q

Quinton, John D. ..... 4—211

R

Raimbault, C. ..... 5—188
Raudsepp, Eugene ..... 10—207
Also 11—229
Rege, R. A. ..... 12—144
Reis, Thomas ..... 11—171
Reitz, O. ..... 3—129
Reneau, Daniel D., Jr. ..... 6—189
Repucci, L. C. ..... 7—147
Also 8—115
Richardson, J. A. ..... 7—125
Rijnaard, P. ..... 5—193
Robinson, W. Bruce ..... 12—103
Rolfe, J. R. K. ..... 8—168
Rowan, Robert L., Jr. ..... 1—128

S

Sage, B. H. ..... 6—191
Salusinszky, A. L. ..... 10—193
Samans, C. H. ..... 10—135
Santaorez, L. Lema ..... 3—137
Sato, Kenji ..... 11—177
Sawyer, Frederick G. ..... 1—161
Schindler, D. L. ..... 11—205
Schuman, S. C. ..... 5—165
Schilken, H. P. ..... 4—187
Schmidt, Alfred ..... 11—146
Schrage, Charles ..... 1—107
Schreiner, W. C. ..... 6—161
Sechrist, C. N. ..... 9—303
Shain, Stephen A. ..... 4—194
Shambaugh, J. P. ..... 5—145
Sheehan, J. R. ..... 10—165
Short, Byron E. ..... 6—123
Sittig, Marshall ..... 11—155
Smith, Cecil L. ..... 2—105
Smith, Ernest L. ..... 8—145
Smith, W. H. ..... 12—132
Smith, W. N. ..... 5—219
Spaeder, C. E., Jr. ..... 12—144
Sparks, C. P. ..... 5—184
Spencer, F. J. ..... 3—106
Also 7— 83
Stanford, V. ..... 12—103
Stauffer, H. C. ..... 5—149
Stieghan, D. L. ..... 3—170
Stobaugh, Robert B. ..... 1—143
Also 2—137
Also 3—149
Also 4—149
Also 5—205
Also 8—125
Also 10—143
Stotler, H. H. ..... 5—165
Stover, W. A. ..... 5—145
Strelzoff, Samuel ..... 5—179
Stupin, Walter J. ..... 5—222
Surowiec, Alfred J. ..... 5—198
Swearingen, J. S. ..... 8—137
Swift, G. W. ..... 11—205
Szabo, T. T. ..... 5—215

T

Tadenuma, Hachiro ..... 11—195
Takao, S. ..... 11—151
Tans, A. M. P. ..... 1—134
Also 1—142
Also 2—157
Also 3—156
Also 4—168
Tejada, V. M. ..... 3—137
Also 3-141
Thomas, K. ..... 12—103
Thorne, H. C. ..... 1—172
Also 7—145
Todd, Robert W. ..... 9—311
Triechler, D. G. ..... 12—158
Tritsmans, P. A. ..... 8—141
Tugendhat, Georg ..... 2—175
Also 4—134
Also 5—238
Also 6—210

V

van den Berg, G. J. ..... 5—193
Van der Wee, P. ..... 8—141
Van Driesen, R. P. ..... 5—153
Verhaegen, C: C. ..... 8—151
Vervalin, Charles H. ..... 3—189
Also 4—207
Also 5—227
Also 5—235
Also 6—217
Also 8—102
Also 11—235
Von Kutepow, N. ..... 11—141

W

Wang, J. C. ..... 8—155
Weatherby, Joe J. ..... 4—131
Weekley, G. H., Jr. ..... 10—165
Weiner, Arnold L. ..... 2—125
Welsh, C. J. ..... 7—103
West, B. ..... 12—137
White, E. A. ..... 5—159
Wilson, John D. ..... 1—157
Woodle, Robert A. ..... 7—133

Published errata are indexed by article titles

TITLE INDEX

1-104 Personalize Mechanic's Training. George O. Pitts

1-107 Trouble-Shooting HF Alkylation. Keith Forry and Charles Schrage

1-115 Practical Tips on Contract Maintenance: How to Select a Contractor. Roger M. Haynes

1-116 Practical Tips on Contract Maintenance: How to Contract Turnarounds. E. W. Horn

1-119 Standard Estimates Can Cut Maintenance Costs. Gus A. Anderson

1-123 Management Information Systems Tomorrow's Maintenance Tool. H. R. Carter

1-126 Resin Cocoon Protects Water Line. Anon

1-128 Reset Equipment Better Using Plastic Grout. Robert L. Rowan, Jr., and C. F. Overbeck

1-131 7-Way Pump Check Cuts Seal Failure. H. B. Hummer

1-134 Find Compressibility for: Methane, Ethane, Ethylene, Propane, Propylene, Butane, Butylene. A. M. P. Tans

1-135 Thermo Properties of Non-Hydrocarbons, Part 1: Ammonia. L. N. Canjar, E. K. Pollock, D. E. O'Brien and F. S. Manning

1-139 Thermo Properties of Non-Hydrocarbons, Part 2: Carbon Dioxide. L. N. Canjar, E. K. Pollock, T. W. Cadman, W. E. Lee and F. S. Manning

1-142 Find Surface Tension of Alkanes. A. M. P. Tans

1-143 Petrochemical Guide, Part 4. Phenol: How, Where, Who—Future. Robert B. Stobaugh

1-153 Estimate Electrical Systems This Way. William G. Clark

1-157 Want to Predict Cost Escalation? John D. Wilson

1-161 Best Picks for '66: Petrochemicals. Frederick G. Sawyer

1-167 The Practical Side of Creativity. A. W. Frazier

1-172 Managing Capital Expenditures: Part 1—Know How to Request Money. H. C. Thorne and W. E. Miller

2-105 Controllers—Set Them Right. Paul W. Murrill and Cecil L. Smith

2-125 How to Clean and Dry Compressed Air. Arnold L. Weiner

2-129 Use These Design Criteria for Large Complete Recycle Urea Plants. Lucien H. Cook

2-137 Petrochemical Guide, Part 5. Toluene: How, Where, Who—Future. Robert B. Stobaugh

2-143 New Design Method to Check Towers for Dynamic Stability. Kenneth DeGhetto and William Long

2-148 Select Best Oxo Catalyst Cycle. Hans Lemke

2-153 Calculus Solves Everyday Problems. J. W. DeFarges (*Erratum:* 11-129)

2-157 Surface Tension of Alkenes. A. M. P. Tans

2-158 Thermo Properties of Non-Hydrocarbons, Part 3: Carbon Monoxide. L. N. Canjar, J. Heisler, D. E. O'Brien and F. S. Manning

2-161 Thermo Properties of Non-Hydrocarbons, Part 4: Hydrogen. L. N. Canjar, C. F. Ho Fook, D. E. O'Brien and F. S. Manning

2-167 Managing Capital Expenditures: Part 2—The Divergent Path to Money Spending. William R. Park

2-171 How Behavior Affects Job Relationships. C. B. Lepak and M. E. Lynch (*Erratum:* 4-129)

2-175 Diversification Keynotes Europe's New HPI. Georg Tugendhat

3-106 These Non-Tariff Barriers Hamper Expanding International Trade. F. J. Spencer

3-126 New Vibration Standards For Electric Motors. Michael P. Blake

3-129 What BASF-IFP Hydrocracking Will Do. A. Billon, M. Derrien, J. C. Lavergne, H. Nonnenmacher, W. Oettinger and O. Reitz

3-135 Behind Ethane Boom in South Louisiana. C. F. Montgomery

3-137 Thermo Properties of Non-Hydrocarbons, Part 5: Nitrogen. V. M. Tejada, B. Santaorez, L. Lema, A. Lozano, B. Penaranda, and L. M. Bhalla

3-141 Thermo Properties of Non-Hydrocarbons, Part 6: Oxygen. V. M. Tejada, H. Castillo, L. Lema, J. Penaranda, A. Lozano and L. M. Bhalla

3-145 These Nomographs Speed Hot Carbonate Process Calculations. George E. Mapstone

3-149 Petrochemical Guide, Part 6. Naphthalene: How, Where, Who—Future. Robert B. Stobaugh

3-156 Find Ethylene, Propylene and 1-Butene Compressibility. A. M. P. Trans

3-157 Cold vs. Hot Wall Pressure Vessels. D. W. McDowell, Jr., J. D. Milligan and A. D. Korin

3-161 Physical Properties of Hydrocarbons, Part 5—Chlorinated Methanes. Robert W. Gallant

3-170 Dry Cracked-Gas With Molecular Sieves. J. E. Pierce and D. L. Stieghan (*Erratum:* 6-112)

3-173 New Way to Figure Minimum Reflux. Alessio Lessi

3-181 Managing Capital Expenditures: Part 3—These Two Tools Simplify Evaluations. Alan G. Bates

3-189 How to Prove You're Worth Your Salt. Charles H. Vervalin

4-131 Coyanosa Plant Gets Free Power and Refrigeration. Joe J. Weatherby

4-134 Natural Gas In Europe: How Big? Georg Tugendhat

4-137 How to Operate an Amine Plant. Don Ballard

4-145 What You Should Know About Filters. Dunman Perry, Jr.

4-149 Petrochemical Guide, Part 7. Xylenes: How, Where, Who—Future. Robert B. Stobaugh

4-159 File Reports for Easier Retrieval. Thomas Garcia-Borras

4-161 Thermo Properties of Non-Hydrocarbons, Part 7: Sulfur Dioxide. L. N. Canjar, C. R. Jonas and F. S. Manning

4-165 Thermo Properties of Non-Hydrocarbons, Part 8: Water. L. N. Canjar, D. Best, L. M. Bhalla and F. S. Manning

4-168 Find *n*-Butane Fugacity. A. M. P. Tans

4-169 Use Two Standards for Cost of Capital. William G. Nelson, IV

4-173 How Good Are Latent Heat Calculations? Stanley H. Fishtine

4-180 Package Plants Fill Vital Need for Industrializing Nations. Clyde M. Edwards

4-183 Heating Oils Are Tested in the Cold. S. H. Patinkin and R. L. Pontious

4-187 HTP: After Five Years. H. K. Kamptner, W. R. Krause and H. P. Schilken

4-194 Best Approach to Compressor Performance. Stephen A. Shain

4-199 Ethylene Plant Capacities Increase as Co-Products' Value Dominates Economics. S. M. Frank and J. R. Lambrix

4-203 Prepare Cat for Better Hydrotreating. M. B. Brewer and T. H. Cheavens

4-207 Note These Steps in Tank Safety. Charles H. Vervalin

4-211 Guide Employes to Mental Health. John D. Quinton

4-216 Should You Study Another Language? Michael E. Lynch

5-140 HDA Process Makes Cheap Benzene. Stanford Feigelman and C. B. O'Connor

5-145 Save With New Cracking Catalysts. E. J. Demmel, A. V. Perrella, W. A. Stover and J. P. Shambaugh

5-149 Cost of Hydrogenating Lube Oils. Harold Beuther, R. F. Mansfield and H. C. Stauffer

5-153 Commercial Experience With H-Oil. C. R. Griswold and R. P. Van Driesen

5-159 H-G Hydrocracking Today. R. G. Craig, E. A. White, A. M. Henke and S. J. Kwolek

5-165 Make Liquid Fuels From Coal. K. C. Hellwig, E. S. Johanson, C. A. Johnson, S. C. Schuman and H. H. Stotler

5-170 Onstream Inspection Increases Run Length. C. B. Parrish

5-175 Insure Long Runs Through Better Relief Valve Maintenance. R. W. Lortz

5-179 Centrifugals Cut Ammonia Costs. Samuel Strelzoff (*Erratum:* 6-112)

5-181 API Subcommittees Survey Reveals Cracking Failures of Austenitic Steel. A. S. Couper and H. F. McConomy

5-184 Seek Your Managers Objectively. C. P. Sparks

5-187 Five Ways to Measure Maintenance. E. Johnson

5-188 Extract Aromatics With DMSO. B. Choffe, C. Raimbault, F. P. Navarre and M. Lucas

5-193 How Partial Oxidation Pressure Affects Ammonia Production Costs. G. J. van den Berg, P. Rijnaard and D. J. Byrne

5-198 Estimate Distillation Sidestreams. Alfred J. Surowiec

5-201 When to Use Low Alloy Steel for Hydrogen Service. George A. Nelson

5-205 Petrochemical Guide, Part 8. Aromatics and Derivatives: How, Where, Who—Future. Robert B. Stobaugh

5-215 Predict Terpolymer Equilibria Data. T. T. Szabo, E. B. Nauman and R. F. Blanks

5-218 Melamine—Osterreichische Stickstoffwerke A.G. Anon

5-219 Sell or Hold? How to Decide. W. N. Smith

5-222 Enthalpy of Propane-Propylene Mixtures. Walter J. Stupin

5-227 How to Get Fire-Safety Information. Charles H. Vervalin (*Erratum:* 7-81)

5-235 So Jim Carter Has Been Promoted. Charles H. Vervalin

5-238 U.S. HPI's New Headache—Problems in the EEC Money Market. Georg Tugendhat

6-116 How to Calculate Weighted MTD's. Dale L. Gulley

6-123 Better Method to Find Pressure Drop. Byron E. Short

6-131 What Are Optimum Conditions for Air-Cooled Exchangers? F. W. Lohrisch

6-137 How Many Tube Rows for Air-Cooled Exchangers? F. W. Lohrisch

6-141 How to Rate Heat Exchanger Bids. W. J. Baker (*Erratum:* 7-81)

6-144 New Process for Liquid Recovery. J. P. Herrin

6-149 FIND BEST CONTRACT FOR YOUR PROJECT. William B. Hudson

6-153 PHYSICAL PROPERTIES OF HYDROCARBONS, PART 6—CHLORINATED ETHYLENES. Robert W. Gallant

6-161 PREDICT H's OF MIXTURES USING B-W-R. H. E. Barner and W. C. Schreiner

6-167 TO MAKE IMPROVED HYDRAULIC FLUIDS. E. E. Klaus

6-171 HOW TO OPERATE A GLYCOL PLANT. Don Ballard

6-181 THIS COMPUTER PROGRAM OPTIMIZES SULFUR PLANT DESIGN AND OPERATION. P. C. Opekar and B. G. Goar

6-186 HOW TO APPLY GERMAN PROCESS KNOW-HOW. F. B. Grosselfinger

6-189 H-x DATA FOR BINARY SYSTEMS. Woodrow W. Chew and Daniel D. Reneau, Jr.

6-191 HEAT OF VAPORIZATION OF LIGHT HYDROCARBONS. D. J. Graue, Virginia Berry and B. H. Sage

6-195 NATURAL GAS LIQUIDS FOR PETROCHEMICALS: HOW BIG? Norman J. Lewis

6-200 ESTIMATING LIQUID DENSITIES. P. Goyal and L. K. Doraiswamy

6-203 PHOSPHORIC ACID—WHAT YOU SHOULD KNOW. R. S. Bickley and D. G. MacKellar

6-207 WRITE REPORTS THAT GET ACTION. Anon

6-210 WHERE WILL NORTH SEA GAS LEAD HPI? Georg Tugendhat

6-217 FIND BETTER WAYS TO DO YOUR JOB. Charles H. Vervalin

7- 83 PROGRESS IN POLYMERS TODAY. F. J. Spencer (*Erratum:* 12-82)

7-103 THE UNICRACKING-JHC PROCESS TO DATE. G. D. Cheadle, C. J. Welsh, P. M. Dana and T. A. Lappin

7-109 FOUNDATION DESIGN FOR 8-LEGGED VESSELS. Andrew A. Brown

7-111 PHYSICAL PROPERTIES OF HYDROCARBONS, PART 7. CHLORINATED ALIPHATICS. Robert W. Gallant

7-119 FUELS TO RUN U.S. REFINERIES IN 1975. J. M. Huneke

7-125 HOW GAS COMPOSITION AFFECTS TREATING PROCESS SELECTION. K. J. Fitzgerald and J. A. Richardson

7-130 MONITORS DETECT OIL IN WATER. H. M. Crawford

7-133 FIGURE SOLVENT EXTRACT OF HEAVY OILS. Robert A. Woodle

7-137 A NEW CORRELATION FOR THE SPECIFIC HEAT OF LIQUID HYDROCARBONS. S. T. Hadden

7-145 MARKET RESEARCH MANAGEMENT: PART 1—ANALYZE VENTURES BY MARKET RESEARCH. H. C. Thorne (*Erratum:* 11-138)

7-147 PERSONNEL RATING: USE TESTS OR SUPERVISOR'S JUDGMENT? L. C. Repucci

8-102 WHY HAVE A FORMAL EMPLOYE APPRAISAL SYSTEM? Charles H. Vervalin

8-108 YOU SHOULD USE COUNSELING AS A DEVELOPMENT TOOL. Anon

8-111 TRAIN SUPERVISORS TO INTERVIEW. J. F. Miraglia and R. F. Powell

8-115 HOW TO SQUELCH BIAS IN RATINGS. L. C. Repucci

8-120 HOW DOW CHEMICAL DID AN APPRAISAL STUDY. Joseph H. McPherson

8-125 PETROCHEMICAL GUIDE, PART 9. ACETYLENE: HOW, WHERE, WHO—FUTURE. Robert B. Stobaugh

8-137 COMPARE METHANE LIQUEFYING PROCESSES. J. S. Swearingen

8-141 WHAT TO DO ABOUT CRUDE UNIT PREHEAT EXCHANGER FOULING. P. Van der Wee and P. A. Tritsmans

8-145 TEXAS EASTERN PLANS LNG CONCRETE TANK. Ernest L. Smith

8-151 TEMP. CASCADE BEST HEATER CONTROL. C. C. Verhaegen

8-155 TRIDIAGONAL MATRIX FOR DISTILLATION. J. C. Wang and G. E. Henke (*Erratum:* 9-169, 12-82)

8-164 CONTRACT INSTRUMENTATION TRAINING PAYS. Joe H. Byrd

8-165 FLOW RATE COMPUTED FOR PACKED BEDS. K. C. Chao and D. Adams

8-167 H-x DATA FOR METHANOL-TOLUENE SYSTEM. C. A. Plank and D. E. Burke

8-168 BP's ISOM PROCESS GOES COMMERCIAL. B. W. Burbidge and J. R. K. Rolfe

8-173 MARKET RESEARCH MANAGEMENT: PART 2—EVALUATE BEFORE BUILDING A REFINERY. S. W. Curry and G. G. Meier

9-173 thru 9-276 Refining Process Handbook

9-277 TELOMERIZATION: WHAT YOU SHOULD KNOW. Walter A. Butte

9-281 WHAT'S THE FUTURE FOR PVC? Georges Olivier

9-285 MINIMIZE CORROSION IN MEA UNITS. J. C. Dingman, D. L. Allen and T. F. Moore

9-291 MONITOR SKIN TEMPERATURE TO REDUCE HEATER TUBE CARBURIZATION. E. B. Backensto, J. E. Prior and B. F. Porter

9-297 INSTRUMENT SYMBOLS—A NEW APPROACH. Joseph Conison

9-302 MELAMINE—CHEMICAL CONSTRUCTION CORP. Anon

9-303 HOW TO STUDY EFFECT OF BLOWBY GAS. C. J. Domke, D. J. Lindley and C. N. Sechrist

9-311 MARKET RESEARCH MANAGEMENT: PART 3—DO BETTER PETROCHEMICAL MARKET R & D. Robert W. Todd

9-317 HOW TO 'GO UNION' IN FIVE EASY STEPS. Matthew Goodfellow

9-325 REPLACE OBSOLETE SKILLS—NOT EMPLOYES. Ron R. De Cristofaro

10-114 WHAT INFORMATION IS ESSENTIAL FOR GOOD PIPING DESIGN? R. W. Judson

10-119 PLANT LAYOUT AND PIPING DESIGN FOR MINIMUM COST SYSTEMS. Robert Kern

10-127 U.S. VS. BRITISH AND EUROPEAN PIPING SPECIFICATIONS. J. F. Lancaster and W. B. Hoyt

10-135 WHICH MATERIAL FOR PROCESS PLANT PIPING? Carl H. Samans

10-140 MAKE STEAM REFORMER CONTROLS FAIL-SAFE. L. C. Axelrod and J. A. Finneran

10-143 PETROCHEMICAL GUIDE, PART 10. ETHYLENE: HOW, WHERE, WHO—FUTURE. Robert B. Stobaugh

10-158 A NEW APPROACH TO HIGH TEMPERATURE EXCHANGER PROBLEMS. Donald J. Bergman

10-161 A NEW CORRELATION FOR THE SURFACE TENSION OF HYDROCARBONS. S. T. Hadden

10-165 JET COMPRESSORS RECOVER WASTE GASES. George H. Weekley, Jr., and James R. Sheehan

10-171 PHYSICAL PROPERTIES OF HYDROCARBONS, PART 8—PRIMARY ALCOHOLS. Robert W. Gallant

10-183 TO TEST CATALYTIC CRACKING ACTIVITY. Clifford G. Harriz

10-189 HOW ACTIVATED CARBON RECOVERS GAS LIQUIDS. J. C. Enneking

10-193 TRY YOUR HAND AT LINEAR PROGRAMING. D. Nemec and A. L. Salusinszky

10-199 USE 'ENGINEERED TRAINING' FOR BETTER PLANT STARTUPS. Raymond O. Loen

10-203 HOW TO GET YOUR MESSAGE ACROSS. E. A. Michals

10-207 TRY THESE SIX STEPS TO MORE IDEAS. Eugene Raudsepp

11-141 NEWEST ACETIC ACID PROCESS. H. Hohenschutz, N. Von Kutepow and W. Himmele

11-145 TETRAOXANE: WHAT YOU SHOULD KNOW. Y. Miyake

11-146 NEW OSW PROCESS MAKES MELAMINE DIRECT FROM UREA. Alfred Schmidt

11-151 DMF: NEWEST BUTADIENE SOLVENT. S. Takao

11-155 POLYACETAL RESINS—A 1966 REVIEW. Marshall Sittig and Donald E. Hudgin

11-171 COMPARE VINYL ACETATE PROCESSES. Thomas Reis

11-174 HOW TO MAKE XYLYLENE DIAMINE FROM XYLENES. Taijiro Oga

11-177 MAKE MORE TDI AND LESS POLYMER. Kenji Sato

11-180 MORE DATA ON POLYPHENYLENE OXIDE. Alastair C. Gowan

11-183 MAKE STRONG NITRIC ACID DIRECTLY. Lars Hellmer

11-189 DEHYDROGENATE PARAFFINS WITH 'I'. R. W. King

11-195 MAKE CHEAPEST FORMALIN FROM DME. Hachiro Tadenuma, Torajiro Murakami and Hirotsugu Mitsushima

11-197 NTA: NEWEST DETERGENT BUILDER. Robbert R. Pollard

11-205 MORE LOW TEMPERATURE V-L DESIGN DATA. D. L. Schindler, G. W. Swift and F. Kurata

11-211 HOW TO DESIGN PLATE-FIN EXCHANGERS. Y. N. Fan

11-218 NEW GUIDE TO STEAM TRACING DESIGN. Kenneth G. Eland

11-221 DELAYED COKE—A VALUABLE FUEL. Frank J. Donnelly and Leon T. Barbour

11-225 THIOCON PROCESS SWEETENS KEROSINE. Lee A. Crenshaw and Elwin Myers

11-229 HOW TO COPE WITH JOB-RELATED TENSION. Eugene Raudsepp

11-233 SIX GUIDES TO MORE EFFICIENCY. T. G. Cain

11-235 MEET SOME MEN WITH WRECKED CAREERS. Charles H. Vervalin

12-88 NOW PREDICT RECOVERY FROM ADSORBENTS. C. L. Humphries

12-97 RECENT ADVANCES IN CRYSTALLIZATION. John E. Powers

12-103 MORE ON AZEOTROPIC DISTILLATION. Lloyd Berg, Stanford V. Buckland, W. Bruce Robinson, Richard L. Nelson, Thomas K. Wilkinson and Joseph W. Petrin

12-107 FIGURE OPTIMUM ABSORPTION DESIGN. J. C. Kim and M. C. Molstad

12-109 USE GRAPH TO ANALYZE PILE SUPPORTS. A. A. Brown

12-113 PHYSICAL PROPERTIES OF HYDROCARBONS, PART 9—THERMAL CONDUCTIVITY OF C_1 TO C_5 HYDROCARBONS. Robert W. Gallant

12-123 FIGURE LREP FOR BATCH PLANTS. B. A. Maristany

12-127 USE INCREMENTAL COST ANALYSIS SAFELY. F. R. Douglas, W. H. Kapfer, F. V. Marsik and G. Werner

12-132 DYNAMIC PROGRAM: EASIER DECISIONS. W. H. Smith

12-135 COMPUTER FIGURES CIRCULAR SEGMENTS. Charles S. Larkey

12-137 SIMPLIFIED UTILITY LOOP BALANCING. B. West and A. J. Newton

12-141 HOW A&M FIRE SCHOOL SERVES THE HPI. Britt Martin

12-144 NEW HYDROCRACKING REACTOR STEEL DATA. R. M. Brown, R. A. Rege and C. E. Spaeder, Jr.

12-152 INDUSTRIAL SPYING: INDUSTRY'S NEWEST HEADACHE. C. G. Bradley and R. W. Pike

12-158 USE VISUAL AIDS TO MAKE YOUR POINT. D. G. Treichler